52-53

Vol. LII. No. 195. SPRING, 1935.

The Bristol Medico-Chirurgical Journal

PUBLISHED UNDER THE AUSPICES OF

THE BRISTOL MEDICO-CHIRURGICAL SOCIETY.

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The Bristol Medico-Chirurgical Journal

" Scire est nescire, nisi id me Scire alius sciret."

SPRING, 1935.

THE PROBLEM OF MAN'S ORIGIN.

The Presidential Address, delivered on 10th October, 1934, at the opening of the Sixty-second Session of the Bristol Medico-Chirurgical Society.

BY

A. RENDLE SHORT, M.D., F.R.C.S.,

Professor of Surgery in the University of Bristol; Surgeon, Bristol Royal Infirmary.

IN 1927, at a Presidential Address of the British Association, Sir Arthur Keith said that this problem could be regarded as definitely settled; man is derived not, of course, from any living anthropoid ape such as the gorilla or chimpanzee, but from an ape-like ancestor. The common stem giving rise to man and the apes probably diverged in Miocene times, and our immediate ancestors were intermediate in structure between modern man and the ape. No doubt this view is very widely accepted, especially by the older anatomists and by the writers of orthodox text-books of science; no doubt it is commonly taught in nearly every university in the world. Very many facts and

observations seem to confirm it. But Science has a way of upsetting our "settled conclusions" just when we are beginning to feel happy and secure about them, and I propose to bring evidence before you this evening, not to establish an alternative theory—apparently the time has not yet come for that to be done—but to show that though Sir Arthur Keith declared that Darwin's theory of the ascent of man would never be shaken, it is being shaken. Mr. Pyecraft, one of the Zoologists at the Natural History Museum, South Kensington, wrote recently concerning the Theory of Natural Selection generally: "We seem to be threatened with a recrudescence of the controversy over the Darwinian theory. But now the conflict is not to be between learned professors of biology on the one side and the Church and the people on the other, but an internecine warfare, that is to say, between ourselves. It has taken something like fifty years to secure what we might call orthodoxy among the elect; now all is to be thrown into the melting-pot again."

The same appears to be true with regard to the ape theory of man's origin. The doubts about it are beginning to percolate down to the newspapers. The *Morning Post* wrote, just about the time when England went off the Gold Standard: "There are disturbing signs that the scientific world may have to go off the ape standard. Speeches at last week's meeting of the British Association suggested that scientists are uncertain whether the stability of physical evolution can be maintained, and now Professor Sergio Sergi, at the World's Anthropological Congress, seems to be depressing the value of the 'missing link.' Owing to the general uneasiness that prevails, it is impossible to give authentic quotations for the evolution theory, but personally I am getting into something else as soon

as I can!" And in a more serious vein, the *Daily Telegraph*, in a review of a book we shall presently be quoting from, said in December, 1933: "Since the first flush of enthusiasm which followed the enunciation of the Darwinian theory of evolution, the tempo of the science of anthropology has suffered a surprising slowing up. This branch of knowledge has advanced from certainty to perplexity." It may be said: "But this is only the opinion of newspaper men." We turn, therefore, to the scientists.

Let us begin by reviewing the evidence for the ape line of descent. The first and greatest argument, of course, is the very close anatomical similarity between the human body and that of the gorilla or chimpanzee. The likenesses are so numerous and so well known that it would be tedious and unnecessary to enumerate them, they are so obvious that in the opinion of many nothing more need be said; man and the ape must be brothers. Amongst animals bodily resemblances have generally been taken to prove blood-relationship. But there is another side to the matter. Although there are striking resemblances, there are also very constant differences. The human brain is far larger and more developed. The ape has a projecting muzzle, a hairy coat, and a foot quite unlike ours; the great toe is opposable like a thumb. Man has no vibrissæ, (tactile hairs); every other mammal has them. The apes have no hymen. No doubt it will be replied that these are merely the differences between species or genera, but a much more considerable point is next to be mentioned. The trend of modern zoological research goes to show that likeness of bodily structure is *no proof of common descent or blood-relationship.* There is a phenomenon amongst animals, living and extinct, known by the name of "Convergence";

two totally unrelated animals, widely different in their geological history and zoological relationships, may have a strangely similar bodily structure or individual organs, if their mode of life is similar. And this Convergence is not an occasional and exceptional phenomenon; examples of it are numerous and widespread. Let me remind you of a few. How like the common newt, that divides its time between stream and shore, is the crocodile, whose habits in that respect are similar! Yet the crocodile is a reptile and the newt an amphibian. Their zoological relationships are very far apart; their resemblance is due to the suitability of that particular pattern of legs, tail and general conformation for a life spent betwixt land and water. The spermatozoon of vertebrates, *e.g.* toad, is, down to minute details, like a free-swimming, lowly form of life called Trichomonas. But no one imagines that vertebrates are descended from Trichomonas. The extinct (Mesozoic) plants called Bennettitales show a sort of flower, with male and female elements and pollen, but they are Gymnosperms, allied to modern Cycads, and cannot possibly be ancestors of modern flowering plants.

Common wheat exists in several varieties, bearded and beardless; white, red or black eared; winter and spring. But just the same varieties are found of other wheats, spelt, rye and barley. This must be an inherent law of grain; it cannot be chance.

The Dipnoi (air-breathing fish living in mud or water) cannot be the ancestors of frogs, toads, etc., but they share with them the paired lungs, the partitioned auricle (of the heart) and many other characters.

The eyes of the octopus are just like those of a mammal, with cornea, iris, ciliary body, lens and retina; but the octopus is not the ancestor of the

vertebrates. Lowly vertebrates have no eyes (amphioxus) or a very elementary eye (the hag fish). Two animals are known that have eyes like an old gentleman's bifocal spectacles, the upper half to see in air and the low in water, but one is a fish and the other is a beetle.

Three types of fish, the electric eel, Torpedo and Malapterurus, can give powerful electric shocks, but they are quite unrelated. The claws of a lobster and of a scorpion are on the same pattern. The glow-worm and the firefly, and also certain deep-sea fish, are luminous in the dark. One of the most remarkable examples of Convergence is furnished by the marsupials (pouched mammals of primitive type) of Australasia. There are forms that mimic most of the common types of the mammals of Europe, Asia and Africa. There is a volplaning opossum like a flying squirrel or flying lemur, the flesh-eating Thylacine like a wolf, another marsupial like a rat, and another like a bear! Nor is it only in outward form that Convergence is seen. The crocodile, like the bird, has a four-chambered heart. The extinct flying lizard, the pterosaur, had air-filled bones, and the foramen admitting the air situated just where it is in birds.

Bower points out that both plants and animals are bisexual, but it is scarcely credible that they have a bisexual common ancestor. Osborn calls attention to the strange parallelism between extinct reptiles and modern mammals; the huge dinosaurs with horns (Triceratops) like a rhinoceros; ichthyosaurus, like a whale; pterosaurs, like a bat; flesh-eating cynodonts with teeth like a dog; iguanodon, walking on its hind legs and tail like a kangaroo; the turtle, armour-plated like an armadillo, or the extinct glyptodon. Surely all this must be law,

not chance. Especially when we find that each of these types require not one, but many coincident modifications; *e.g.* the heavy-headed rhinoceros must have massive legs and a strong neck; the flesh-eating Thylacine, the wolf and the extinct cynodont must have agility to hunt their prey.

The most recent, and one of the most eminent of writers on the descent of man is Professor Le Gros Clarke, who on the whole is in favour of the theory of descent from an ape ancestor, but he frankly acknowledges the difficulties and pitfalls of the hypothesis. He says: "In the evaluation of genetic affinities anatomical *differences* are more important as negative evidence than anatomical *resemblances* are as positive evidence. It becomes apparent that if this thesis is carried to a logical conclusion, it will necessarily demand a much greater scope for the phenomenon of parallelism or convergence in evolution than has usually been conceded by evolutionists. The fact is that the minute and detailed researches which have been carried out by comparative anatomists in recent years have made it certain that parallelism in evolutionary development has been proceeding on a large scale, and is no longer to be regarded as an incidental curiosity which has occurred sporadically in the course of evolution. Indeed, it is hardly possible for those who are not comparative anatomists to realize the fundamental part which this phenomenon has played in the evolutionary process."

We are driven to the conclusion, therefore, that the similarity between man and the ape may be another example of Convergence; in other words, the resemblances do not definitely prove blood-relationship.

But further, as Wood Jones, the Professor of Anatomy in the University of Melbourne, has pointed

out, there are some anatomical features that make it easier to believe the apes are descended from man—an impossible hypothesis—rather than man from an extinct ape. The course of evolution never retraces its steps (Dollo's Law). If a modification has once been made, it persists. Now in some respects man's structure is more primitive than that of the apes. Like early mammals, but unlike the apes, he retains the ethmo-lachrymal, ethmo-sphenoid, and spheno-parietal articulations. The male external genitalia are more like those of primitive primates than those of the ape. Some primitive muscles, *e.g.* the pyramidalis and the pronator radii teres, are absent in the apes.

According to the law of Recapitulation, every animal has to climb up its own genealogical tree, that is to say, its ontogeny repeats its phylogeny, or its development in embyro gives evidence of its ancestry. Also, throw-backs may occur, that is, pathological specimens will be born from time to time that resemble the ancestor. Judged by either of these tests, the ape-ancestor theory stands definitely discredited. It is true the infant may have a hairy skin (lanugo), but so have nearly all mammals besides the apes. The sloped-back forehead, great eyebrow ridges, projecting muzzle, and opposable great toe are never seen in the human fœtus ; in fact, the ape fœtus is more like a human being than *vice versa*. The Darwinian tubercle on the human ear, and multiple nipples, which are often quoted as proving man's animal ancestry, are nothing to the point, because no ape has long, pointed ears or multiple nipples. Then consider the congenital abnormalities with which our profession makes us well acquainted : club foot, hare lip, cleft palate, congenital dislocations, nævi, supernumerary fingers or toes, spina bifida. None of these recall the ape. Who has

ever seen a human with a projecting muzzle or opposable great toe? We come to the conclusion, then, that the argument from anatomy and development is too uncertain to be relied upon. In the opinion of Professor Wood Jones and others man's ancestor was not an ape, but must be sought much farther back, and in a much more primitive mammal. He suggests a little creature called Tarsius, which has been described as a living fossil.

The next main argument for the ape descent theory is derived from physiology. It is maintained, for instance, that ape's blood and human blood are identical, and differ from that of other mammals; this is taken to prove close relationship.

Far more work has been published on the comparative anatomy of the primates than on their comparative physiology. The best modern summary of the latter known to me is Zuckerman's *Functional Affinities of Man, Monkeys, and Apes*, published at the end of 1933. He shows that the blood of man and the apes cannot be regarded as identical. The blood of all animals has a good deal in common. The red corpuscles of man and most mammals are exactly alike under the microscope; the hæmoglobin of man and most mammals is indistinguishable by the chemist. As Nuttall showed in 1904, human serum and ape serum give the same precipitin reaction, though for ape's serum a much higher concentration is needed. But there are differences. Human blood contains hetero-agglutinins against the red corpuscles of the ape, and *vice versa*, so that it would be most dangerous to use ape's blood for transfusion in man. Basophile leucocytes, which are very scarce in human blood, are 3 per cent. of gorilla's white cells, 15 per cent. in the orang and 20 per cent. in the chimpanzee. By the

use of anti-erythrocyte sera Landsteiner and Miller were able to show in 1925 that human and ape red-blood corpuscles are not identical and can be distinguished from one another, but those of a white man and a negro cannot. (This is very fairly pointed out by Sir Arthur Keith himself in his article on the origin of man in the last edition of the *Encyclopædia Britannica.*) They go on to conclude: "The experiments described show that a definite and constant serological difference is demonstrable between the bloods of man and the two anthropoids studied, chimpanzee and orang-outang"; and again: "This conclusion is in agreement with the accepted view that man has not evolved directly from any of the existing species of primates, as was formerly supposed, but that the Catarrhina, anthropoids and man have all sprung from a common stock."

Zuckerman further reminds us that man is physiologically different from the apes in his use of fire and tools, in his function of speech, his carnivorous diet and custom of monogamy. The last two he regards as related to one another. Anthropoid apes go about in small parties, one adult male with several females; they live mostly on a vegetable diet, and all find their own food. When man took to hunting for a living, the females, especially if pregnant or nursing, were less able to collect for themselves and had to be fed by the male, who could not protect all his wives from other marauding males, and did not want too many mouths to feed, so contented himself with monogamy.

We turn next to the evidence of palæontology. Here we must definitely put out of our minds the wholly imaginary picture of ape-men that appear from time to time in the illustrated London papers. As

Professor Wood Jones says: "The missing-link pictures must be deleted from our minds, and I find no occupation less worthy of the science of anthropology than the not unfashionable business of modelling, painting and drawing these nightmare products of imagination, and lending them in the process an utterly false value of apparent reality." He compares it with the pseudo-science of the old phrenological charts. Confining ourselves to real evidence, although the whole world has been ransacked in the search for "missing links," the actual discoveries have been few, and have taken unexpected forms. When the first skulls of Neanderthal man were found, with his huge brow ridges and head sunk on the chest, it seemed as if the true ape-man was before us. But Neanderthal man had nothing else ape-like about him. His brain was as big as ours; his teeth were truly human; he used tools, lit fires and buried his dead. So-called Rhodesian man appears to be closely allied to the Neanderthal type, and so does the Galilee skull. On the other hand, the Tauungs skull, called *Australopithecus*, also first described as a "missing link," is really that of a young anthropoid ape (Keith). A better case can be made out for three other fossil types, yet all with serious reservations. I append a very brief summary (the details are taken from the writings of Sir Arthur Keith). First in the field was *Pithecanthropus erectus*, found in 1894 at Trinil, in Java, by Dubois. These remains consist of the top of a skull, three teeth, and, found at a distance of some 15 yards, a femur. To these is to be added, possibly, a piece of a jaw. The beds in which these were found are considered to be late Pliocene, or more probably early Pleistocene. (Pleistocene means the Ice Age; Pliocene is the geological time-period next

earlier.) The skull has been variously described as that of a large extinct ape (by Virchow, Bumuller, Kollman), or intermediate between man and ape (Dubois, Keith and others).

Next in order is *Eoanthropus dawsoni*, found by Mr. Charles Dawson at Piltdown in Sussex in 1911–1912. The geological level, again, may be late Pliocene or early Pleistocene, and again there is a discrepancy between the skull, which has the shape and brain capacity of modern man (Keith), and the jaw found near it, which is ape-like. A piece of worked elephant bone was also discovered close by.

More recently, in 1928–29, a nearly complete fossil skull with several fragmentary jaw bones and teeth has been found near Peking by Mr. Pei, and described by the late Dr. Davidson Black. These also are dated early Pleistocene. The skull has a brain capacity equal to that of a human, but is shaped rather like *Pithecanthropus*. The jaws and teeth, also, are intermediate between man and ape, so far as can be determined from the scanty nature of the evidence. The find is called *Sinanthropus pekingensis*. Worked flints with evidences of fire have been discovered in close association with the remains.

To sum up, there have undoubtedly been some strange types of mankind on the earth in prehistoric times, but that they link man with the ape is open to question.

It is clear that *Eoanthropus* was truly human ; it is possible, but not certain, that the jaw belonged to the same individual. They were not found close together. It is by no means so certain that the femur (human) and the cranium (ape-like) of *Pithecanthropus* have anything to do with one another. Peking man was truly human. Several "episodes" show how

cautiously this palæontological evidence ought to be interpreted. In 1922 Professor Gregory, in America, found a single tooth which he thought was from a man-like ape, and called it *Hesperopithecus*—"the evening of the apes"! The London papers, of course, came out with the usual imaginary drawings, half-ape, half-man. In 1927 it turned out that the tooth belonged to neither ape nor man, but to an extinct peccary! In 1926, at Gardar, in Greenland, parts of a human skull and jaw were found, more ape-like in some respects than even the Rhodesian skull. It would have been a beautiful missing link, but for the fact that it came from a Norwegian twelfth-century Christian graveyard! According to Professor Hansen, who described it, it is a throwback to primitive man. Sir A. Keith, with far greater probability, concluded that it is the result of acromegaly. But that raises the question whether the other abnormal skulls may not be due to disease also.

The real ape-like ancestor of man, therefore, remains to be discovered, if he ever existed. With this agree the candid words of Sir A. Keith, written in 1931: "The fossil forms which represent this stage in the evolution of anthropoid and man have not yet been found; their existence is inferred."

The most unexpected part of the palæontological evidence, however, remains to be mentioned; the farther back we look for early man the more like ourselves he appears to be. When skulls with a cranial capacity equal to that of a modern European, and in all respects undeniable members of the species *Homo sapiens*, were discovered at Galley Hill, and at Calaveras in geological deposits at least as old as those in which *Pithecanthropus erectus* was found, it was felt that the evidence must be lying, and it was more or

less discredited. But during the past year or two at Oldoway, Kanam, and Kanjera, in East Africa, Dr. L. Leakey has obtained skulls of the same great age, early Pleistocene, which are definitely modern in type, and associated with worked flints of human manufacture. These conclusions were verified last year by four committees of experts, anatomists and geologists, sitting simultaneously.

In 1925 a similar find was made in the City of London in digging the foundations for a building. We thus reach the surprising conclusion that *Homo sapiens* is as old as, or older than, any of his alleged ancestors, so far as at present discovered. In other words, the palæontological evidence reduces itself to something not far removed from nil. Reid Moir has found worked flints in East Anglia in earlier beds still, the Pliocene, which present evidences of the work of an intelligent people.

Very briefly, let us have a word with the psychologists. Some of them have been inclined to adopt the attitude that the ape at his best is as good as man at his worst. They emphasize the cleverness of the tricks which a chimpanzee may be taught, profess to be able to recognize ape language, and would have us believe that the Australian aboriginal or Central African native has barely the intelligence of a beast. But, as Zuckerman points out, it is very doubtful if, according to exact experiment, the chimpanzee is any more intelligent than a baboon, or, one might add, making due allowance for anatomical differences, a dog or a horse. And as for the African or Australian native, it is at length being recognized that you must not judge intelligence by that of the adult brought up in the wilds, but rather by that of the child given a proper education. Granted this, the

best of the native children will be at least as good as the worst of the European.

Dr. Oliver in September, 1932, tested two large schools in Kenya, the one consisting of native boys and the other of the children of European settlers. He found that the average intelligence of the natives was only 85 per cent. that of the Europeans, but 14 per cent. of the natives surpassed the European average. It is noted that the Europeans were of good stock, probably higher than the average at home.

In assessing the relative brain power of Africans and Europeans, it must not be forgotten that the standard of bodily health in the white man is as a rule far better, and this is found to have an effect on learning capacity. Dr. J. H. Sequeira, in his admirable Chadwick Lecture of 28th April, 1932, drew attention to the astonishing multiplicity of diseases in the individual native, whose person in most instances presents the picture of a pathological museum. Thus in an investigation in one large district 94·8 per cent. of the children under 10 years of age showed symptoms of chronic malarial infection ; 75 per cent. of the boys in a reformatory revealed infestation with hookworm ; yaws is almost universal, and is a very disabling disease ; syphilis is relatively unimportant ; human tuberculosis, because of the absence of bovine infection, is less common than in Europe ; pneumonia of pneumococcal origin is an especially fatal disease in natives and is very widespread. It is generally believed that the natives of Australia are as low in the scale of human intelligence as any, but an Australian aboriginal was good enough a year or two ago to play in first-class cricket ; another is an eminent mathematician. Central African natives can be taught to make microscopic slides and find malarial parasites. To talk

about the ape being as intelligent as man is too puerile to be taken seriously.

A curious experiment has lately been carried out by Professor and Mrs. Kellog of Indiana University. They brought up their own child, aged ten months, and a chimpanzee, aged seven and a half months, born in captivity, on exactly the same lines, down to the minutest details. The animal was fed upon a bottle, clothed, bathed, fondled and given exactly the same treatment as the baby. It was put in a perambulator and wheeled about, and in due course taught to walk and to feed itself with a spoon. Its mistakes were corrected, as one corrects the mistakes of a child. But the chimpanzee remained a chimpanzee and the child a child. It was definitely inferior in learning, though it was able to respond to 58 different words and the child to 68. It is put to the animal's credit that if hungry it would bite the professor's trousers! The experiment was brought to an end after nine months, that is to say, just when a child begins to make rapid strides in its education.

It is generally taken for granted that human intelligence shows a progressive development: that modern man is far cleverer than his Neolithic ancestors, and these again than the cave-man and the flint-chipper of Chellean (early Palæolithic) times. Of course, our civilization is immensely more complicated. Our machines and our medical skill would be a marvel to the ancient Britons. But the argument that therefore we have better brains is entirely fallacious. Other men have laboured and we have entered into their labours; other men have invented and observed, and we have learned what they had to teach. Some of the most remarkable of human discoveries were made so long ago that their origin is

lost in the mists of antiquity. Who were the prehistoric geniuses who counted the days of the year, discovered the properties of opium, learned how to make cheese and soap, combined copper and tin into bronze, and invented the smelting of iron ore? Who made the first boomerang, or the first bow and arrow, or tamed the first horse? Indeed, we may push the inquiry farther back still, and pay tribute to the intelligence of the man who first chipped flints, and learned the secret of making fire. As Mr. Reid Moir, the great authority on Palæolithic man in East Anglia, has recently stated, the very earliest worked flints known to us, the pre-Chellean, present such differences that they must have been made by an intelligent and well-cultured people, who had, moreover, a great fight to maintain mastery over the numerous wild beasts that shared the lordship of the world with them. No wonder the earliest known skulls had brains as big as ours.

In this connection we may quote the words of Professor McDougall, of Harvard University, a leading authority on psychology: "It is now widely recognized that the strict neo-Darwinian theory of organic evolution is inadequate. . . . It finds itself, at the conclusion of its attempts, with mind upon its hands as an enormous remainder or surd, that cannot intelligibly be brought into the scheme, or ignored, save at the cost of the absurdity of the whole scheme."

Let us conclude with a few quotations from first-class authorities. Professor Le Gros Clarke, an advocate of the ape-descent theory, writes: "While, however, we may accept the thesis of man's descent from 'lower' forms of life, there is by no means a consensus of opinion among biologists as to the precise route by which the human family arrived at its present

status, or what may have been the real nature of its immediate progenitor." In his opinion the common ancestor of man and the apes must have been very far back, and quite a small animal, no larger than a gibbon. It is the different structure of the foot that leads him to this conclusion. He further recognizes that no mere play of external forces upon a more primitive organism that reacts to its environment in obedience to what Darwin called Natural Selection is adequate to explain the origin of man.

With this accord the words of D'Arcy Thompson, the eminent zoologist, in his introduction to Berg's book on *Nomogenesis:* "How species are actually produced remains an unsolved riddle; it is a great mystery. Here at least is a conclusion that few men of our time will venture to dispute."

Professor H. F. Osborn, the greatest authority in America on fossil vertebrates, and head of the Natural History Museum, wrote: "Hence the idea of man's ape ancestry is a myth and a bogey, due to our previous ignorance of the real cause of human evolution." And again he writes of "the profound cleft between the ape and the man. It is our recent studies of the behaviourism of the anthropoid apes as contrasted with the behaviourism of the progenitors of man which compel us to separate the entire ape-stock very widely from the human stock."

Wood Jones comes to the following curious conclusion: "Man is more primitive than the monkeys and apes. . . . It follows that far from being a descendant of the apes, he may be looked upon as their ancestor. . . . Indeed, from the point of view of anatomy, I conceive it to be impossible to take any other view."

And Tilney, in his monumental work published two

or three years ago on *The Brain from Ape to Man*, says: "Apes are quite as unconcerned in the origin of man as they are innocent of participation in it."

I am well aware, disconcertingly aware, that the main trend of our line of investigation to-night has been destructive rather than constructive. To have to pull down a popular theory is less pleasing than to build up another with a wealth of new facts and argument. But we medical men have sufficient experience of the workings of living organisms to know that simple explanations generally prove to be inadequate. There remaineth very much land to be possessed.

LICENCE TO PRACTISE AND LIBERTY TO TEACH MEDICINE IN THE ENGLISH PROVINCES.*

BY

J. A. NIXON, C.M.G., M.D., F.R.C.P.,

Professor of Medicine in the University of Bristol;
Physician to the Bristol Royal Infirmary;
Consulting Physician to Southmead Hospital.

IN electing me an honorary member of the Manchester Medical Society and inviting me to address you on the occasion of the Centenary you have paid me a very great compliment for which I give you my warmest thanks. I believe there is a three-fold reason for my being thus honoured. The first and strongest is the personal friendship between your President and myself, the second was a desire to acknowledge a debt which Manchester owes to Bristol—Dr. Thomas Turner, the founder of your Medical School, was apprenticed to Nehemiah Duck, the third to emphasize the independence and interdependence of the provincial medical schools of England.

Your President asked me to address you on some subject which might bring out the importance of the provincial towns of England in the evolution of medical practice and teaching.

There is a danger lest the newness of our provincial universities should cause us to forget the important

* A Paper read at a Meeting of the Manchester Medical Society on Wednesday, November 7th, 1934.

part played by provincial towns in furnishing the public with competent and educated medical practitioners.

The fame of the capital cities of London, Edinburgh and Dublin has in recent years given rise to the belief that until the newer universities were founded the training of medical practitioners for the country at large was carried out in these capitals. This was not the case. Facilities for training medical practitioners in the capitals were never adequate to the needs of the country.

The origin of the modern system of medical education and licensing cannot be traced beyond the Benedictine School of Monte Cassino, where a monastery was founded by St. Benedict himself in 529. This was a monastic school of medicine with a hospital or infirmary for the sick. In 800 there was a school of medicine at Salerno on the model of those at Edessa or Baghdad where the Arabian physicians studied and taught. The history of medical education and regulation of medical practice in England begins in the twelfth century. This was the period immediately following the Norman Conquest, when the Universities of Oxford and Cambridge began to flourish (no matter what dates are claimed for their earliest foundations), when the craft guilds took root and the monastic Hospital of St. Bartholomew was founded in London.

Physicians were educated at one or other of the many universities which sprang up in the twelfth and thirteenth centuries just after the Crusades, and were the result of the introduction of the knowledge of the East to Western Europe.

Masters of Surgery, or Surgeons of the Long Robe as they were called in France, were similarly university

graduates, men like Henri de Mondeville, Guy de Chauliac and John of Arderne, who Hæser suggests was educated at Montpellier. The Master-Surgeons formed a small guild in London as early as 1369, united for a short time with the physicians in 1423, and finally became merged into the United Company of Barbers and Surgeons in 1540. Originally they were consulting and operating surgeons, such as exist to-day. The Surgeons of the Short Robe were barbers practising surgery.

But the innumerable rabble of pretenders in medical practice led the physicians to petition King Henry V, begging amongst other requests his "hey prudence to send warrant to all the Sherrefs of England, to every practysor in Fysyk, nought graduated in the same science, that will practise forth, be withynne one of the Universities of this lond by a certayne day, that they ben able and approved after trewe and streyte examinacion be receyved to theyr degree and they that be nought able to cese from the practyse unto the tyme that they be able or never more entre mette thereof." The result of the petition is mentioned in Fuller's *History of the University of Cambridge:* "The same year (1419, Henry V) it was ordered in parliament that none should practise physic or surgery except approved on by one of the universities."

In London soon afterwards, at some date between May, 1421, and May, 1423, the physicians and surgeons formed a conjoint college to regulate the medical and surgical professions; but after 1424 there is no further evidence of its existence, and the two branches of the profession went their several ways. The surgeons, incorporated as a Fellowship in London in 1435, taught apprentices and examined outsiders who were anxious to practise surgery.

Hitherto it will be seen that the efforts at regulating the profession had been confined to examining practitioners or aspirants to practise and issuing licences. The theory of physic was studied as a branch of polite learning, the practice of medicine and surgery was picked up from association with existing practitioners, and more especially by joining the army in France. The Fellowship of Surgeons of 1435 introduced the systematic teaching of apprentices: treatises on practical surgery had come into vogue, such as those of de Mondeville and de Chauliac, which were being translated into English. These books were handbooks for general practice. Norman Moore says: "Yet so penetrating is the influence of that great teacher, the patient, that even in the twelfth century the observing habit of the medical mind might probably have been detected."

From the time of Henry V to that of Henry VIII the history of medical education consists chiefly of a record of struggles between various authorities for the right to license medical practitioners. In London the Company of Barber-Surgeons, and later the College of Surgeons, shared with the College of Physicians the right to license practitioners in the City of London and within seven miles of the same. Yet they had grudgingly to admit another licensing authority—"except he be first examined, approved and admitted by the Bishop of London or the Dean of St. Paul's." This was the common manner of licensing in the fifteenth and sixteenth centuries. The guilds or companies shared with the bishop of the diocese the licensing authority. The bishop or his representative had to associate himself with four doctors of physic before granting a licence in medicine, and for surgery other expert persons in that faculty who were to certify

after due examination as to the fitness of the candidate to practise.

Yet even the Acts of Henry VIII giving the bishops and barber-surgeons licensing rights were overridden in a few years by the Act of 1542, which laid down that it shall be lawful to every person being the King's subject having knowledge of the nature of herbs, roots and waters . . . within any part of the Realm of England or within any other of the King's dominions to practise, use and minister in and to any outward sore . . . or drinks for the stone, strangury and agues without being sued under the Act 3 Henry VIII, c. 11, for the regulation of physicians and surgeons. The reason for these exemptions is explained in the Act as being the avarice and ignorance of the most part of the Members of the Craft of Surgeons. Although it is stated that the herbalists and water-curers had hitherto not taken anything for their pains and skill, but "have ministered the same to the poor people only for neighbourhood and God's sake and of pity and charity," there is nothing in the Act to forbid them to take rewards and fees in future.

Dr. A. A. Mumford has just written me a very kind letter which throws a new light on the episcopal licences. I did not previously know that subscription to the Thirty-nine Articles was demanded of candidates for this form of licence. He describes an instance in his own family of the difficulties and the methods adopted to overcome them: "James Langley, of Isham, Northampton, born about 1699, settled at Oundle as a surgeon in 1738. He was, I judge from the books I possess with his name inscribed, a well-educated man, trained in one of the Nonconformist academies, when Nonconformists were not allowed to study at the English universities. He practised as a surgeon at Oundle until

1741, but without a bishop's licence, for he would not sign the Thirty-nine Articles, a necessary condition of obtaining their licence in the provinces. He was cited, with several others, to appear before the bishop at Peterborough in 1739. The others were licensed, but he was not licensed, being a Nonconformist. He had, however, to clear out of Oundle and went to London, but not being a member of the College of Surgeons, could only practise by living outside the city boundaries. One side of Old Street was in the boundaries, the other, 'north side,' was outside. So John Langley apparently lived on the north side of the street. His son-in-law, John Ryland, was a dealer in oils and hops, and as such was occasionally entrusted with the care of certain cases of mental derangement, treatment by oils being then rather popular. I have cited this case of my ancestors to show that it was not entirely lack of educational opportunities that delayed the progress of medical education, since medicine was one of the subjects for which students at the private Nonconformist academies were prepared, but rather the vested interests of the episcopacy, which, however, were not very frequently called into action, if you may judge by the episcopal register I have examined."

Anatomical instruction was first recognized in the Seal of Cause granted by the Town Council of Edinburgh to the surgeons and barbers in the year 1505, and confirmed by King James IV in the following year. This preceded even the law of Henry VIII in 1540, by which four bodies of executed criminals were granted to the surgeons and barbers of London. Wherever a Guild or Company of Barber-Surgeons existed similar rules for the teaching of apprentices were prescribed. Manchester, I understand, had no

such guilds in Tudor and Stuart times. I am at a loss to know what facilities, if any, were offered to surgeons' apprentices in Manchester except that they could learn from their masters, and the bishop of the diocese could license them if they were found competent. Comrie states that about 1657 in Scotland anyone who desired to practise medicine or surgery might do so without let or hindrance so long as he did not invade the district in and around Glasgow supervised by the Faculty of Physicians and Surgeons or practise as a Barber-Surgeon in one of the burghs where a guild existed. The necessary qualification elsewhere consisted simply in the ability to obtain patients. The practice in Edinburgh as described by Comrie at the beginning of the eighteenth century is probably a fair representation of what was going on in England also.

"From 1657 onwards a change had taken place in the nature of the surgeon's craft. Pharmacy was now taught along with the art of surgery. Pharmacy had a greater attraction to apprentices than the barber craft, and they began to set up as surgeon-apothecaries. During the course of the seventeenth century the surgeon-apothecary became the type of practitioner who looked after the health of the community and lost all connection with the calling of the barber. His training consisted solely in apprenticeship, generally of five years to an established practitioner, although in the case of a man who wished to attain reputation and success in practice he had usually taken occasion in his youth to hear lectures at one of the universities or in some continental medical school."

The career of your great obstetric surgeon, Charles White, seems an admirable example of this way of

"graduating." Professor Adami has thus described his medical education: "There were then (he was born in 1728) no medical schools in the provinces, for Oxford and Cambridge, though they afforded occasional anatomies and gave degrees in medicine, had no adequate course of hospital study; and as for hospital opportunities in Manchester, it was Charles White himself who launched the first hospital there. Experience was gained in the main from apprenticeship, and it would seem that Charles acted as apprentice to his father. His wider education away from home began at the age of twenty, when he went up to London. The first lectures he attended were those upon Anatomy by William Hunter." In 1762, at the age of thirty-four, he was elected to the Royal Society, and in that same year was admitted a member of the Corporation of Surgeons. In 1783 a College of Arts and Sciences was established in Manchester, and he took charge of the Anatomical Department.

EIGHTEENTH CENTURY: REVIVAL OF HOSPITALS.

The introduction of the system of unpaid attendance of the medical staffs at our voluntary hospitals is the outcome of the teaching of apprentices. For close on two hundred years after the suppression of the monasteries there was no provision of hospitals for the sick in England except in the City of London, where the Corporation was strong enough to retain the hospitals of St. Bartholomew, St. Thomas and Bethlem. Elsewhere the hospitals ceased to exist at the same time as the monasteries to which they were attached.

For some time surgeons and apothecaries were trained by the apprenticeship of students to

practitioners. When their apprenticeship was finished the students were admissible to the guild (if there was one) in the town where they wished to practise. If there was no guild they presented their credentials to the bishop of the diocese or his representative and received a licence to practise. But the guilds only enjoyed their powers from the fifteenth century to the end of the seventeenth.

It was in 1468 that the barbers practising surgery obtained a charter from Edward IV. The guilds were first given charters by Henry II, but perhaps most of the guilds in the large towns, such as Bristol and Exeter, were formed in the reign of Edward III.

During the sixteenth and early seventeenth centuries the Crown, in the absence of sufficient regular taxes, was driven to raise money by the sale of monopolies, but this caused so great an opposition that all action which could be construed as restraint of trade was held to be contrary to the public interest. Amongst other monopolies licensed medical practice was condemned and anarchy prevailed.

Soon after the beginning of the eighteenth century the Barber-Surgeons and Surgeons Companies ceased to attract candidates for admission. Their monopoly of practice was gone, and with it the value of their licences.

The period of their demise, fortunately, coincided with a new impulse to found hospitals. In 1696 the Corporation of the Poor in Bristol saw the need for hospital accommodation, and St. Peter's Hospital was founded, in part by voluntary subscriptions (*e.g.* Edward Tyson), and staffed by some volunteers (Dr. Dover being one). Then in rapid succession charity hospitals were opened.

1719 Westminster.
1725 Guy's.
1728 Dublin, Jervis St. Hospital.
1729 Edinburgh Royal Infirmary.
1734 St. George's.
1736 Winchester.
1737 Bristol Royal Infirmary.
1740 London Hospital.
1743 Northampton.
1745 Middlesex Hospital founded. Barbers separated from Surgeons in London.
1751 Newcastle.
1753 Manchester.
1800 Royal College of Surgeons, London, chartered.

I think there was some connection between the Toleration Act of 1689 and the foundation of these hospitals. The Restoration meant a revival of commerce; at the same time the thinkers of the nation turned their attention to science, and both commerce and science reacted on religion. There was a good deal of religion in the science of men like Newton. A great impulse to church-building was given by the Fire of London. It made Sir Christopher Wren into the greatest of English architects: previously he had been a man of science, eminent in astronomy, almost pre-eminent in experimental medicine as a member of the Oxford Society, which presently became the Royal Society.

The revocation of the Edict of Nantes (1685) caused exiles from France to swarm into England and all Protestant countries. They brought with them treasures of character as well as skill in new crafts and industries. Immediately upon this followed the Trial of the Seven Bishops (1688) and the revolution which brought William of Orange to the throne.

The reign of Queen Anne was marked by the rising

strength of England, not only in statesmanship, in wars on sea and land, but in religious thought, in philosophy, and above all in humanitarianism. This religious and intellectual revival was responsible for the foundation of hospitals all over the country, and the spirit in which they were founded can be best exemplified in the declaration contained in the " Vellum Book " of the Bristol Royal Infirmary, which was taken almost verbatim from the records of the first meeting of the promoters of the Westminster Hospital, 1719, which begins: " Whereas many sick persons languish and die miserably for want of necessaries . . . we whose names are underwritten (in Obedience to the rules of our holy Religion) desiring as far as in us lies to find some remedy for this great misery of our Poor neighbours do subscribe the following sums of money, to be by us continued yearly during pleasure for the procuring furnishing and defraying the necessary expence of An Infirmary at Bristol for the benefit of the poor sick." Here we see pure, disinterested philanthropy was the motive force in the foundation of our voluntary hospitals. Among the promoters there were always to be found medical men ready to give their professional services gratuitously to the charity. From the earliest days, however, surgeons were allowed to bring their apprentices to assist them and to receive money for teaching their pupils. In Bristol this was no inconsiderable item. One surgeon at the Infirmary received in pupils' fees £708 10s. 4d. in thirteen years from 1744 to 1757. This right to teach pupils at the hospitals which they had helped to found gave the surgeons a distinct advantage over the private practitioners unconnected with any hospital. The philanthropy which actuated the founding surgeons was supported in later times by

substantial advantages both in the right to have pupils and in the prestige attaching to a position on a hospital staff. Henceforth the apprentice was rarely satisfied with seeing the work done by one master alone and that work confined to private practice. Without any force of legislation all medical students who were able arranged to "walk the hospitals" either in the capitals or in the provinces.

From the novelists' accounts we might conclude that medical students in the eighteenth and early nineteenth centuries were illiterate young men of low social standing. Munro Smith has taken pains to show that this was not the case in Bristol, and probably not in other centres: "The authorities of the Bristol Infirmary were extremely particular as to the class of youth taken, and if their general education was not considered sufficiently good they were refused. Thus in 1766 the son of a Mrs. Ford was not admitted because his schoolmaster could not give a sufficiently good report of his studies, and he was sent back to school for another year. They were frequently the sons of gentlemen of good position; in fact, amongst the pupils and officials at the Bristol Infirmary, especially during the first hundred years of its existence, the standard as to social position was very high."

I must apologise for saying so much about Bristol, but our records on the subjects are unrivalled. We possess at the Royal Infirmary fourteen bulky manuscript volumes containing written accounts of Infirmary affairs—elections, lists of officers, notices of meetings, newspaper cuttings and historical memoranda, together with biographical histories of many of those who were connected with the institution from the time of its inception (1736) to the year 1842. These books were

collected by Richard Smith, who was Surgeon to the Infirmary from 1796 to 1843. There are hundreds of biographical histories, and amongst them are many records of the pupils and apprentices.

Whilst the opportunities for study were vastly improved by the increasing number of towns where teaching was systematically undertaken, scarcely any attempt was made by the Government to see that medical practitioners were qualified to practise. The guilds had lost their authority, the bishop's licence was no longer required, and the areas of jurisdiction of the colleges of surgeons in the capitals were very restricted. Doctors for the army in Marlborough's wars and the navy were examined as far as could be insisted by the college and the halls, but readers of *Roderick Random* may gather that in some instances the examination was not very searching.

I believe the Slave Trade called for closer supervision, and the professional standing of many of the "African Surgeons" was exceedingly high, notably Falconbridge, whose evidence before the Parliamentary Committee was one of the most powerful factors in bringing about the Abolition of the Slave Trade. In this connection we find an Act passed in 1789 requiring surgeons on the "African" ships to produce certificates of having passed an examination at Surgeons Hall in London or at the College of Surgeons of Edinburgh or Dublin, or at "some publick or county hospital." Under this Act the surgeons of the Liverpool Infirmary met once a month regularly between 1789 and 1807, examining 634 candidates and passing rather less than 500. I cannot discover records of any other public or county hospital exercising this right, though I suspect that Falconbridge, a student of the Bristol Infirmary, became an "African

Surgeon" on some Bristol recommendation without any diploma.

There seems to have been very little attempt made to license private medical practitioners. The qualification of a doctor was ability to get patients; yet there were obvious advantages in having studied in recognized hospitals under competent teachers, and very shortly after the revival of hospitals the hospital surgeons began to form private medical schools where anatomy was taught regularly. There was keen competition to form these schools in the great provincial cities such as Manchester, where schools of medicine or anatomy were started.

In 1800 the Royal College of Surgeons in London was granted its charter, and aimed at obtaining a monopoly for teaching and licensing all surgeons in the realm. It was given practically no compulsory powers, and unlicensed practice flourished unchecked. The licence of the college was optional, but the numerous independent schools quarrelled for recognition and the right to prepare candidates for examination by the college.

In addition to the practitioners licensed by the Royal College of Surgeons there were many general practitioners apprenticed under the Society of Apothecaries. The Society of Apothecaries of London was incorporated in 1606, in union with the Grocers Company. A new and independent charter was granted in 1617. Modern medical education in England we owe to the Apothecaries Society. It was the first body to appoint examiners in medicine; but more than this, it recognized medical and surgical teaching in the provinces, including clinical work in provincial hospitals. This attitude the Society maintained in spite of the most obstinate opposition

from the Royal College of Surgeons. How important this action by the apothecaries was is demonstrated in Professor Hay's Liverpool centenary address: "In 1821 the Society of Apothecaries recognized the lectures of Dr. Joseph Jordan of Manchester as fulfilling their requirements, and three years later, in 1824, the clinical teaching of the Manchester Infirmary School was accepted as meeting London regulations. Manchester has the honour of being the first provincial medical school in England. The two men responsible were Dr. Jordan and Dr. Thomas Turner, both of Manchester." Thomas Turner had been apprenticed to the Bristol surgeon-apothecary Nehemiah Duck.

The apothecaries could take no fees for attendance, but might charge for their medicines. Although many of them were skilful practitioners, there were more whose sole object was to prescribe (and charge for) as many bottles of medicine as their patients would accept. Even in modern times we know that no consultation is considered quite satisfactory without a bottle of medicine.

There is an interesting sidelight thrown on their general efficiency by the remarks made at a conference reported in the *Lancet* in 1844: "Mr. Astley, one of the oldest licentiates of the Company of Apothecaries, could well remember the condition of the general practitioner previous to 1815. So ignorant were they in the country that he recollected an instance of a man of fortune and influence having to send thirty miles for a surgeon to pass a catheter for him."

At length the apothecaries in 1815 obtained an Act of Parliament enabling them to hold an examination for all England and to prosecute unqualified apothecaries. The provincial medical

schools then began to claim recognition to prepare candidates for the apothecaries' examination and licence. The College of Surgeons refused to recognize the provincial hospitals as complete clinical schools, and insisted that all candidates for its examination should spend some time "walking" a London hospital. The idea of the college was to make all candidates come to London, and its opposition to the claims of the provincial medical schools was unrelenting.

But the London surgeons reckoned without the apothecaries and the powers conferred on them by the Act of 1815. In 1821 Jordan's lectures in Manchester were recognized, and the barrier against provincial teaching was broken down. In Bristol one of the schools was recognized in 1828, and it became a complete school in 1833: all the work required by the Apothecaries' Society could be carried out in Bristol, whilst the College of Surgeons demanded six months' work in London. The college, faced with the prospect of provincial candidates ignoring its licence and preferring that of the apothecaries, was driven to surrender to Manchester in 1834, and after that date the provincial medical schools' right to carry through the whole curriculum was unquestioned. In 1836 registration of births and deaths was made compulsory by Act of Parliament, and in 1858 The Medical Act was passed, which, whilst it did not forbid unqualified practice, allows no practitioner to recover fees, hold public appointments, or sign certificates unless he has been properly examined and placed on the Register. Henceforward, as death registration had been made compulsory, competence to sign death certificates became necessary for practice.

The open-mindedness of the Apothecaries' Society

had established once and for all the provincial medical schools, but its influence was going to be once more exerted in an unexpected way. When the Register set up by the 1858 Act was opened a woman doctor, Miss Elizabeth Blackwell, who was born in Bristol, made successful application to be entered on the English Register by virtue of her American medical degree (M.D. Geneva). This did not open the door for other women practitioners unless they could secure a medical education and a licence from some British authority. Miss Elizabeth Garrett (Anderson), having applied without success to the other examining and licensing bodies, was in 1862 admitted to the examinations of the Apothecaries' Society, and eventually obtained its licence to practise, which entitled her to be placed on the English Register. The Society of Apothecaries in those early days of the nineteenth century had no rival for enlightenment and broad-mindedness. The provincial schools owe their whole existence to that Society, whilst some of us even hold it in high esteem for throwing open the medical profession to women.

In 1880 the Victoria University was the first in the provinces to receive its charter. By a natural corollary the right to confer medical degrees was shortly (in 1883) granted to that university in Manchester. The year 1880 saw also the abolition of medical apprenticeship.

By slow degrees the responsibility for teaching and the right to license have tended to be controlled by the same educational authority. All modern provincial universities in England owe their medical faculties to medical schools which were founded by the generosity and personal ability of individual members of unpaid hospital staffs. No university outside of London and

Edinburgh has ever founded a hospital or taken any share in the institution of a medical school. But wherever a medical school has survived to become an integral part of a university it will be observed that a medical society, such as the Manchester Medical Society, was founded about the same time and played an important part in fostering the growth of the young medical school. Some of the societies have not survived, but you are to be congratulated that the Centenary of your Society is almost contemporary with the Centenary of your Medical School.

My personal view is that the licensing corporations with no responsibility for teaching have come to the end of their useful existence. They do not now contribute in any way to the progress of medical education. But there is an increasing danger that they may multiply, for the sake of fees, the issue of diplomas in special subjects in which they offer no instruction. This tendency should, I believe, be very closely watched and discouraged. If specialist diplomas are necessary it is essential that they should only be issued by corporations which accept responsibility for giving instruction.

To illustrate my meaning, let me point out to you that already two classes of specialist diplomas exist. Some of these diplomas are issued by universities or schools which can offer facilities for study in particular branches of medicine. Such courses of study may well be encouraged. There are, however, others issued by what must be designated as educationally irresponsible bodies. The time has come for irrevocably combining the licence to practise with the liberty to teach, and I hold that the right to grant licences to practise should be withdrawn from any corporation or authority which is not actively responsible for

affording educational facilities. The privilege of educating recruits to our profession is more important than the responsibility for examining and licensing.* I believe that the standard of medical education in our provincial schools is in no way inferior to that in our capitals. I make no apology for holding these views, which I admit take their origin from a former Master of the College in Cambridge to which I have the honour to belong. Dr. Dell, who was intruded at the Commonwealth as Master of Gonville and Caius College, was the first to suggest that there might be other universities than those of Oxford and Cambridge, and I will conclude with a few quotations from one of his sermons :—

"I conceive it meet, that the civil power, or chief magistrates, should take great care of the education of youth . . . inasmuch as what the youth now is, the whole commonwealth will shortly be." He desires schools throughout the whole nation "not only in cities and great towns, but also, as much as may be, in all lesser villages." "It may be convenient also, that there may be some universities or colleges, for the instructing youth in the knowledge of the liberal Arts . . . also . . . the studies of physic, and of the

* Opinions have differed violently on this question, as indicated by a letter in the *Lancet*, vol. 34 (1839), p. 384, from Dr. George F. Hayden, who wrote :—

"We medical reformers in Ireland have long felt the grievous effects of a union of licensing and teaching in one and the same body." He quotes a petition to the late King (William IV) sent by the London College of Surgeons when London University was seeking for a Charter to enable them to examine candidates and grant degrees in medicine :

"Your petitioners are firmly convinced that the occupation of teaching and the power of examining and conferring degrees ought to be exercised as they now are by distinct institutions, and that the union in the one and the same institution of those discordant attributes must be attended with danger to the public welfare." *Discordant attributes* is a happy phrase !

LICENCE TO PRACTISE AND LIBERTY TO TEACH.

LICENSING.		TEACHING.
A.D.	St. Benedict, 480–543.	A.D. 529. Monastic medical teaching including hospital practice, instituted at Benedictine Monastery of Monte Cassino.
1140. Salerno, licences to practise.	Charlemagne, 742–814. Haroun-al-Raschid, 763–809. Alcuin of York, 736–804.	800. Arabian School of Medicine at Salerno.
12th Century.—Rise of Craft Guilds.	Henry I, 1100, to John, 1199.	12th Century.—Barber-Surgeons instructed their apprentices. Pupillage to established practitioners was customary from this time to 1880. Universities taught medicine without hospital practice until Edinburgh University founded the Infirmary in 1729.
	1209. 3,000 students and Professors withdrew from Oxford to Cambridge. "So that not one remained of all the University."—*Fuller.*	1123. Monastic medical teaching with hospital practice established in London. St. Bartholomew's founded.
1363. Act compelling all surgeons to belong to one of the Guilds.	Edward III, 1327–1377. The Black Death, 1348.	1315. Mondini's first demonstration of Anatomy at Bologna.
1421. First law regulating medical practice. "No one to practise in physic unless approved by the Universities and in surgery by the Masters in that Art."	Henry V, 1413–1422. Perpetual Peace of Troyes, 1420.	
1423. Conjoint Society of Military Surgeons and Physicians founded but short lived.		
	James IV of Scotland, 1488–1513. Henry VII, 1485–1509.	1506. Anatomical instruction made compulsory for surgeons and barbers in Edinburgh. (Seal of Cause to Guild of Surgeons and Barbers at Edinburgh by James IV.)
1511. Bishops' licences instituted.	Henry VIII, 1509–1547.	1536. Suppression of Monasteries.
1524. Licence granted by T. Cromwell to Roger Smyth, citizen and grocer of London, to practise physic and surgery in any part of the realm.		
1617. Apothecaries Society, London, granted separate Charter.	James VI of Scotland and I of England. 1603–1625	16th and 17th Centuries.—Educational system of Barber-Surgeons flourished. Apprenticeship to established practitioners supplemented by

1524. Licence granted by T. Cromwell to Roger Smyth, citizen and grocer of London, to practise physic and surgery in any part of the realm.

1617. Apothecaries Society, London, granted separate Charter.

James VI of Scotland and I of England. 1603–1625

16th and 17th Centuries.—Educational system of Barber-Surgeons flourished. Apprenticeship to established practitioners supplemented by Guild lectures and demonstrations of Anatomy in towns where Guilds existed, but without hospital practice.

1667. Licences granted to Mountebanks to vend medicines and practise medicine and surgery in any city, town or borough in the Kingdom.

Charles II, 1660–1685.
Royal Society founded, 1662.
Revocation of the Edict of Nantes, 1685.
James II, 1685–1688.
Revolution, 1688.
Act of Toleration, 1689.

1696. Revival of Hospitals.
St. Peter's Hospital, Bristol (Poor Law).
1719. Westminster Hospital. } Charity
1737. Bristol Infirmary. } Hospitals.
1753. Manchester Infirmary. }

1789. Act requiring Ship Surgeons to produce certificate of having passed examination at Surgeons Hall in London or at the College of Surgeons of Edinburgh or Dublin or at *some public or county hospital*.

George III, 1760–1820.

18th Century.—Apprenticeship to hospital-surgeon or apothecary.
Practitioners chose to be apothecaries rather than surgeons (or barber-surgeons).
Physicians encouraged apothecaries and introduced them to their patients.

1815 Apothecaries Act.

George IV, 1820–1830.

1821. Apothecaries Society recognized provincial medical schools: *e.g.*, Jordan's.

1824. Manchester, the first complete provincial medical school.

1834. Clinical teaching at Manchester Infirmary recognized by the College of Surgeons.
Manchester Medical Society founded.

1858. Medical Registration Act.

1859. Elizabeth Blackwell admitted to English Register (on American degree).

1862. Elizabeth Garrett (Anderson) admitted to the examination of Apothecaries Society.

Victoria, 1837–1901.

1880. Apprenticeship abolished. Victoria University founded.

1883. First provincial medical degrees (Manchester).

law, according to the reformation which a wise and godly authority will cause them to pass under, both being now exceedingly corrupt and out of order, both for practice and fees." "But why these Universities or Colleges should be only at Cambridge and Oxford, I know no reason. . . . Doubtless it would be more suitable and more advantageous to the good of all the people, to have Universities or Colleges, one at least, in every great town or city in the nation, as in London, York, Bristol, Exeter, Norwich and the like. . . ." He argues "there will then be no such need of endowment of scholarships; inasmuch as the people having colleges in their own cities, near their own houses, may maintain their children at home, whilst they learn in the schools; which would be indeed the greatest advantage to learning that can be thought of."

HABIT AND ILLNESS.*

BY

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THE symptoms of illness may appear as a medley of isolated phenomena, or they may be recognized as parts of some general reaction. In a doctor the capacity to appreciate an underlying unity amidst apparent diversity is a mark of efficiency. The man with the widest possible outlook usually makes the best doctor. Multiple diagnoses should be made with reluctance, and are more likely to be wrong than right.

There are two factors which interfere with breadth of view in clinical work: one is ignorance, which hardly requires discussion, the other is prejudice. Our outlook is liable to be hampered by our particular interests. How easy it is to persuade ourselves that we see what we want to see. Specialism in our profession is so necessary and useful that it requires no special pleading, the dangers of over-specialization are, however, not infrequently the products of a narrow outlook, slender knowledge, or even attenuated honesty. The definition of the word "cure" should always be suspect. I find it necessary to preface my remarks in this way, lest it should be thought that I claim to cure anything. The most I shall attempt

* A Paper read at a Meeting of the Bristol Medico-Chirurgical Society on Wednesday, 9th January, 1935.

is to try and indicate some principles of treatment and follow up certain lines of thought which seem to me reasonable and worth considering.

Illnesses are syndromes. Perhaps some outstanding symptom is singled out in order to give a label to a condition, as for instance typhoid, locomotor ataxia, and phthisis. Actually the label matters little, provided it calls up a complete syndrome or clinical picture. We have to remember that a syndrome is a bilateral mechanism made up of two variables, invasion or trauma on the one side and reaction on the other. The reaction factor is complex and frequently baffles complete analysis. If we look at the problem of ill-health broadly we may detect reactions at various levels. At the lowest level it may be a chemical or physical one only, at the next level it is physiological, at the next psychical; we may even have to consider reactions at the highest or social level, as in the case of insanity. The important point is that our view shall be as comprehensive as possible. Reactions are adjustments, which, if successful, mean return to health. Most adjustments which concern us in illness at the physiological level are actually neuro-physiological, being mediated through an underlying mechanism for co-ordination, the nervous system. Consciousness may or may not be involved. The simplest functional unit in an organized nervous system is conduction in reflex arcs. But with advance in structural complexity of the nervous system further responses, showing higher grades of efficiency, emerge. The responses of the vegetative nervous system subserve the activities of our viscera and are essentially diffuse or widespread, ministering to instinctive cravings of the body. Response at this level is to feeling rather than to thought, so that we

quite rightly appreciate emotional control exercised through the vegetative nervous system, and we must remember, therefore, that emotional control is central control, though involuntary. We cannot, for instance, determine the rate of our heart beat or our vasomotor condition apart from emotional disturbances. Many visceral adjustments acquire automatic precision; that these adjustments partake of the nature of habits appears manifest when they become deranged in functional disorders.

When we pass to the consideration of the voluntary nervous system we recognize the emergence of further capacities. The most fundamental step-up in efficiency is heralded by the appearance of the conditioned reflex. By virtue of this mechanism we become able to learn. Now, responses to significant signals become the order of the day. Skilled adjustments, memories, habits, and delayed reactions have their foundations in the conditioned reflex. Delayed reactions imply internal resistances, and without developing this line of thought in detail, one may state boldly that internal resistance is closely related to the development of consciousness. Routine activities are carried through with a minimum of conscious accompaniment, whereas more complex forms of behaviour, involving choice or decision, are apt to be associated with much internal resistance and to generate a high degree of conscious effort and emotion too. Emotional reactions overflow into the involuntary vegetative nervous system, and manifest themselves by visceral responses of a widespread character. In this way our conscious life may become inextricably mixed up with visceral responses, made manifest as physical sensations or symptoms of ill-health. The pleasure or pain in experience at the conscious level is largely determined

by past pleasurable or painful associations. Of the latter fear and anxiety are the most potent. The development of fear and anxiety states is the signal for the release of widespread visceral reactions. Such reactions may become conditioned; that is to say, on the recurrence of a situation associated by previous experience with anxiety habitual visceral disturbances are prone to appear. Now, if we remember that our viscera are vital organs, representing so to speak the internal combustion engine of the human frame, we shall appreciate how intimately our feelings of health and ill-health are connected with our emotional life. In health we are hardly conscious of having an inside at all, beyond occasional vague feelings of comfort, repletion, or physical fitness. Supposing, however, our emotional life goes wrong, our visceral field becomes the subject of bombardment by unfavourable nervous impulses, and such effects are widespread, hence the protean and diffuse character of the symptoms of the unfortunate so-called "neurasthenic." I need hardly remind you that the term "neurasthenia," is usually wrongly applied. Most of the people so labelled are the victims of continued anxiety states. They have developed unfavourable conditioned reflexes or anxiety habits. In their fear they come to expect certain dire consequences or symptoms, and they get what they fear and expect. The emotional attitudes of fear and anxiety always carry with them this element of expectation. For these people a sound aphorism would be: "Don't worry, it may never happen." It is still better if one can say: "Don't worry, it won't happen." If only they could know this for certain many of them would be cured. Often it is uncertainty that plays havoc with them. In course of time many patients lose sight of the

connection between their anxieties and emotional reactions, so that ultimately physical symptoms occupy the premier position, and in this way habits of ill-health are frequently formed. If symptoms are viewed individually and treated as isolated phenomena, little benefit is likely to accrue to the patient, though the reverse may be the result in the case of the doctor.

Viewed in this way, my opening remarks become clearer. I said that the capacity on the part of a doctor to see an essential unity amidst apparent diversity is a mark of efficiency. The linkage between diverse symptoms is, of course, through the nervous system. When symptoms are multiple and diffuse in their distribution we should suspect functional derangement of the vegetative nervous system, for emotional reactions are essentially of this kind. Thus we are able to subsume a diversity of symptoms under a unifying principle, and recognize complete clinical syndromes.

I hope none of my listeners will get the impression that I am trying to whittle away the importance of organic disease. It does, however, fall to my lot to see so much of the illness-habit that I cannot avoid being on the look out for it, and, I hope, recognizing it when present. "Prejudice," you may say. I plead guilty, though I trust the tendency does not amount to an obsession. If one finds people with nothing organically amiss, and by educating them out of their fears can persuade them to take the risk of believing they are healthy, it is no bad thing.

By way of illustration of my thesis on habit and illness, I propose to consider three groups of patients as typifying certain aspects of the subject. I choose for this purpose migraine, constipation, and insomnia. That these three conditions may become habitual most

of you will agree, even if you are not inclined to accept my views.

First of all, let us consider migraine. It has been the battle-ground of so much controversy and theory that it would be presumptuous to hope to dispose of it in a few minutes. The great variety of treatments recommended for migraine indicate how far we are from appreciating its full significance. Some years ago, starting from the assumption that migraine is perpetuated by habit, I decided to treat a number of consecutive cases by psychotherapy, and by psychotherapy only. As these patients did not mix their treatment, and since they were, for the most part, cases of long standing, it was possible to obtain a reasonable estimate of the value of a single form of treatment. For the immediate purpose of this paper I do not propose to discuss the original genesis of migraine, actually I believe the causes may be multiple. The point I wish to stress is, that when migraine has gone on at intervals for years it is perpetuated by habit, the various phenomena constitute a chain of conditioned reflexes if you will, which are fired off by anxiety and expectation. Each symptom in the migraine complex leads by continuous gradation into the next, the whole series of phenomena constituting the attack. On the occurrence of the initial symptom or aura the patient abandons himself to fear and expectation of the attack, and he gets what he expects as regards sequence of events, duration, etc. I have had cases of 30, 14, 10, and 7 years' duration, which had tried all the orthodox remedies without success, and have responded almost at once to psychotherapy. I have been so much impressed with the readiness with which old standing cases respond to psychotherapeutic treatment, that I now regard a history of many years

as an advantage, rather than the reverse, from the point of view of favourable response to treatment. I have had less success with cases I have seen near the original attack—presumably habit has not yet crept in to any material extent in these cases. The nearer one is to the onset the more likely is one to be faced with some important physiological disturbance, possibly allergic or toxic ; but, in my opinion, such causes do not operate for years. Granted people of a certain innate nervous constitution, they react according to type, and eventually the reaction is perpetuated by pure habit with nothing else behind it. The fact that many long-standing cases respond successfully to two or three interviews, without medicine of any kind, seems to me to place the hypothesis beyond doubt.

Patients habituated to migraine come to cater for their attacks. Their detailed recital of events, and the precautions they take, all illustrate this point. Treatment consists in explaining in simple terms the nature of the nervous mechanism concerned. They must be told not to adopt their accustomed régime, but to carry on in the knowledge that the aura need not develop into a complete attack, and that if they avoid panic it will abort at the start. The majority of patients find this is actually true, and after one or two abortive turns the attacks cease entirely. This has happened too often in my experience to be a matter of chance.

I want now to pass on to the subject of habitual constipation, a problem of everyday practice. Many people, otherwise in reasonably good health, either are, or consider themselves, the subject of chronic constipation. The number of infallible laxative preparations on the market is a witness to this. Can it be really true that numbers of apparently healthy

individuals need so much medicine ? I wish to exclude from the discussion certain primary organic causes of constipation, and also some secondary causes such as piles and fissure in ano, which aggravate the condition and obviously require appropriate surgical treatment. One is left with a number of cases of chronic intestinal stasis, due to a faulty neuromuscular mechanism, in which habit plays the leading rôle. The regular daily evacuation of the bowels is a habit, actually it is a conditioned reflex, established or timed-in by custom, and easily timed-out by change of routine, and notably by anxiety. The best evidence of this is Pavlov's work on conditioned reflexes. Once the habit is upset, the measures adopted in the attempt to re-establish it are frequently responsible for perpetuating symptoms. The average person attaches much importance to the state of his bowels, and rapidly becomes over-anxious when he loses his regular habit. In the early days experimentation with aperients may lead to a complete upset of the timing mechanism of the colon and rectum. Once Nature's machine is thrown out of gear patients tend to get progressively anxious and introspective. This anxiety ultimately becomes the dominant factor in perpetuating the constipation syndrome.

My interest in this subject was first aroused when working among shell-shocked soldiers after the war. I had large numbers of them under my care in Ashton Court Hospital, and among them I found that obstinate constipation was a frequent complaint. I have no doubt that in some cases, at any rate, they had lost the habit of a regular evacuation during their life in the trenches, when a visit to the latrines was apt to be postponed for obvious reasons. In any case, here were a large number of men, previously healthy, who

had become obstinately constipated and were extremely worried about it. In fact, some of them seemed almost to have forgotten the war in their newly-found interest, the state of their bowels. In civil life initial personal neglect and abuse of aperients take their toll of people. One and all, sooner or later, pass into the category of anxious, miserable individuals who watch their stools with gloomy dissatisfaction. The more they watch the worse they get. At the best, the size of stool falls short of their ideal.

As regards the mechanism of the intestinal movements much has been written. The views expressed pay tribute to the ingenuity of observers and theorists. Dual nervous control through sympathetic and parasympathetic channels is freely admitted. There is, however, dispute over the details of the mechanism. Is it mainly reflex, psychical, neurohumoral, or what ?

Surgical enterprise in the treatment of chronic intestinal stasis throws considerable light on the subject. Whether by colectomy or sympathectomy, the aim of the surgeon, perhaps unconscious, is to cut out the neuromuscular control and produce a paralytic flow of faeces into the rectum, which fortunately is guarded by an external sphincter under voluntary control. The sympathectomists at least recognize that in chronic intestinal stasis the patient is defeated by faulty nervous control of the colon. They call it imbalance between the sympathetic and parasympathetic supply. I doubt, however, whether imbalance constitutes reasonable ground for removing normal nervous tissue wholesale. They seem to miss the point that the physiological stimulation of the colon is reflex and habitual. The mental accompaniments of the regularly acting colon are

pleasure and confidence, whereas the mind of the constipated individual is a veritable battle-ground of anxiety (hope, fear, and uncertainty all blended), with hope at a low ebb. Sympathectomy will, I grant you, improve the situation temporarily; but the results are not lasting, a partially paralysed gut is inefficient and cannot be expected to regain normal habits. Violent purges may work, but frighten the patient. The most harmful result of chopping and changing aperients is the destruction of the habit mechanism. Few bowels can stand being whipped into activity without claiming a period of respite afterwards, and this phase of recuperation is labelled "constipation" by the patient, and calls for more aperients. Many times have I seen patients reduced to a state of distress verging on melancholia by the problem of their bowels. Careful investigation, radiological and otherwise, except for delay, may be entirely negative. A prejudice for psychotherapy led me to treat a number of these people purely on psycho-therapeutic lines. Results have seemed to justify this line of treatment.

It is important to spend some time teaching them the physiology of the normal mechanism and by simple psychotherapeutic measures persuade them that their condition is not serious, but the result of loss of habit. Let them realize that they still possess a perfectly normal apparatus capable of being restored to proper functional efficiency, if only they would give it a chance.

Of course, patients like to feel that there is something active left for them to do in the matter. Accordingly, they are instructed to resort to a few simple routine measures. (1) They should drink cold water freely on rising in the morning and carry out a

series of physical exercises when dressing. This serves to initiate normal gastrocolic reflex. (2) They are taught to retire to stool at a definite time each day and allow a sufficient time to be taken over the process. They are forbidden to retire at frequent irregular intervals during the day in the hope that something may happen, for such conduct is pandering to anxiety or panic. (3) They are forbidden to take aperients, though, at the beginning of treatment, they are allowed a glycerine suppository to initiate the reflex at a fixed time of day.

Let me pass on to the consideration of chronic insomnia, a condition which frequently crops up in our daily practice. One must be careful to exclude from the discussion sleeplessness occurring as a phase of acute illness, such as pneumonia or acute abdominal disease, or associated with severe physical pain, more particularly, perhaps, pain in the head. There is, too, sleeplessness, a prodromal symptom of mania and other major mental disorders. Excluding these, there remains a large number of patients who sleep badly, so badly indeed that they become distraught or, at least, very anxious about it. The causes of chronic insomnia among the last class of patients are anxiety and bad habit. The abuse of hypnotics figures largely in the problem.

One may with advantage study the psychology of these people. The starting-point is usually some very genuine anxiety. Reviewing some of my cases, I find under this heading: (i) disturbed nights, owing to the prolonged nursing of some sick relation; (ii) family bereavement, *e.g.* the loss of a child; (iii) business worries; (iv) moral conflict; (v) war memories. These last are now rare, but are represented by the type of insomnia associated with nightmares. It is a matter

of common experience that continued anxieties, which are not properly faced, owing to indecision, regret or remorse, and so forth, lead to sleeplessness. When the patient lacks courage or decision there is a tendency for the anxiety problem to be repressed into the background or fringe of consciousness during the daytime, and by night this unfavourable emotional material wells up into consciousness and prevents sleep. It is fairly obvious that sedatives and hypnotics cannot settle anxiety problems, and that they can hardly be expected to cure the insomnia of a patient whose mind is in a turmoil. The matter is, however, not quite so simple as this. The continued use of hypnotics leads eventually to tolerance, so that in time each drug in turn loses its effect. The patient becomes more and more distracted by the failure of drugs to produce sleep, apart from their total failure to restore the habit of sleep. In this way a secondary system of anxiety is induced. For this class of patient sleep is the one thing he feels necessary to mental salvation. He argues: "If I don't sleep I shall have a complete nervous breakdown, and perhaps become insane," thus in time he panics about not sleeping. Alternatively, he fears that he may become a drug addict. Patients with war memories, or kindred distressing experiences in civil life, are liable to be disturbed by terrifying nightmares. On account of the latter, they may be afraid of going to sleep at all. They find themselves faced with a dilemma. If they sleep they will wake up in terror, and if they don't sleep they will go off their heads.

Before passing on to treatment, let us consider quite briefly the mechanism of normal sleep. In the ordinary way we sleep from established habit. Sleep is a conditioned inhibition of our highest cortical

centres. Monotony of our surroundings plays an important part in the induction of such inhibition. The accustomed bed and surroundings are a help. Noise, though often blamed, is seldom responsible for sleeplessness, for customary noise, such as the roar of traffic and proximity to a railway, soon ceases to claim our attention, though a significant slight noise may do so at once. A mother will sleep through a medley of street noises, but if her child stirs in the cot by her side she is wide awake at once. It is wrong to think that fatigue and exhaustion help in the production of normal sleep. Most of us sleep because we go to bed whether we are tired or not. Brain workers as a whole sleep more lightly and for shorter hours than manual workers. This is, perhaps, contrary to expectation.

The behaviour of victims of chronic insomnia is interesting, and in the main exhibits much uniformity. At any rate, the devices they adopt to secure sleep are limited in number. Here are some of them: the single room, the hot drink on retiring, the extra warm bed, thick curtains, and cotton wool in the ears to exclude noises, reading in bed, counting, etc., etc. Many a patient will say: "I go to bed determined to sleep and make every effort to relax." It is, perhaps, well to remind them:—

> "Sleep is no servant of the will,
> It has caprices of its own;
> When least desired it lingers still,
> When most pursued 'tis quickly gone."

Now as regards treatment: the most important aim is to allay anxiety. How can this be done? Detailed and truthful explanation is all important. I tell them that people don't break down from chronic sleeplessness, because Nature always ensures the necessary minimum of sleep; if they tried to keep awake they

would fail, because absolute sleeplessness is physiologically impossible. Let me remind you again that acute insomnia is excluded from the discussion. All patients who sleep badly are poor witnesses as to the amount they sleep, they all err in the direction of underestimating it. Secondly, I advise all patients with disturbing problems to face them courageously during their waking hours instead of repressing them. The latter proceeding is like putting one's unpaid bills in the waste-paper basket, they are sure to come in "account rendered." The next thing is to point out that the very measures they adopt to secure sleep are a tribute to fear, such measures have already proved a failure, and the mere act of carrying them out is a powerful auto-suggestion that they are not going to sleep. Cotton wool or wax placed in the ears is a particularly pernicious habit. Not only does it fail to exclude noise, but actually it induces hyperacusis. The patient unwillingly listens in order to detect what sounds he can hear through the obstruction. The proceeding finds its parallel in the neurasthenic, who adopts smoked glasses. His eyes become eventually so sensitive that they are dazzled by light of even low intensity. Again, effort at relaxation is the wrong way to set about it, absence of effort is the attitude necessary for relaxation. The patient must be taught to cultivate a complete indifference as to whether he sleeps or not.

The question may be asked: "Have drugs any place in the treatment of habitual insomnia?" Speaking generally, I think the correct answer is "No." In practically all chronic cases drugs have already failed and are partly responsible for the demoralization of the patient. By the mere act of prescribing you undermine the patient's confidence in your psychotherapeutic dicta. To summarize the

principles of treatment. In the first place try and deal satisfactorily with the patient's attitude towards important primary anxieties. Make him realize he has lost a habit and no more. Teach him a healthy indifference towards the sleep problem, emphasize that nature always ensures the necessary minimum of sleep. What he gets beyond this is a luxury, so to speak, and he can well afford to be indifferent about it. This healthy indifference is just the attitude calculated to induce mental and physical relaxation which merges into the state of cortical inhibition we call sleep.

I appreciate that this apparently negative line of treatment may meet with criticism. At the onset of sleeplessness it is often simple and satisfactory to prescribe sedatives and hypnotics and the patient gets well. I quite agree, but there will be a considerable residue of cases which do not prove so easily amenable. The sleep habit once seriously broken is not readily reformed, and drugs won't do it. Each year that passes I see a number of such cases and from a somewhat prolonged experience I am convinced that relief must be found by the re-education of the patient in normal habit through psychotherapy.

In conclusion, in taking as my text " Habit and Illness " I have made it the opportunity to bring to your notice certain aspects of continued ill-health, which find a reasonable explanation in faulty habit formation. It falls to my lot to see many cases of the kind I have mentioned. For the most part these patients have run through the gamut of pharmacopœial treatment and they stand out as failures. For this reason I have chosen to treat them by psychotherapy only. A considerable measure of success has led me to conclude that the hypothesis that they are suffering

from faulty habit and faulty habit only seems justified. In stressing the usefulness of psychotherapy I am not suggesting that drugs and a general medical régime play no part, but that whatever treatment is adopted it must rest on the foundation of re-education of the patient's outlook. To treat individual symptoms is useless. Habits are conditioned reflexes, that is to say, responses to significant signals, formed by past associations. They may involve conscious or unconscious levels of the nervous system. When associations are markedly tinged with anxiety, diffuse reactions occur in the field of vegetative nervous system, producing symptoms of physical ill-health. Frequently, it is these physical symptoms which bring the patient to the doctor, and the associated anxiety state is only elicited on inquiry. The only way to stop such reactions is to educate the patient into a clear understanding of their significance. By this means anxiety is allayed and the path is open for recovery. It is obvious that some degree of intelligent co-operation on the part of the patient is essential to success. One must exercise discrimination in choosing patients if waste of time is to be avoided. Perhaps the chief impediment to successful psychotherapy is advanced years. Habits good and bad become deeply ingrained by fifty; but more important than this is the fixed mental outlook of the elderly patient, he is seldom capable of readjusting his ideas, and is, therefore, a bad subject for re-education.

Reviews of Books

Hugh Owen Thomas. By F. WATSON. Pp. xi., 94. Illustrated. London: Oxford University Press. 1934. Price 12s. 6d.—This book is mainly a sketch of the most unconventional character of the pioneer of orthopædic surgery in Great Britain. Mr. H. O. Thomas, born in 1834, was undoubtedly a searcher after Truth, and if his methods seem somewhat of the crude and rough order, it must be remembered how greatly science and knowledge in surgical matters have increased since his day. His family is thought to be descended from a Spanish boy wrecked on the coast of Anglesea, and each generation appears to have inherited a gift of "bone setting." Their fame spread, and being well-to-do yeoman farmers, they needed no remuneration when they exercised this gift. Hugh Owen Thomas was the first of the family to regularize his position by becoming a properly qualified medical man. He was followed in this course by four brothers. Dr. H. O. Thomas still gave free advice to the poor, and gave up Sundays for the treatment of patients who could not pay fees. His work and its results are to be treated in a second volume, written by an orthopædic surgeon, Mr. D. McCrae Aitken. Although never received heartily by the other surgeons in Liverpool, where he practised—though some of them consulted him for dislocations and fractures—there can be no doubt that the dock labourers and others of the poorer orders had an immense love for and trust in him. When he died in 1891 thousands of poor men and women followed him to the grave, many showing their grief by sobs and tears. He was a man of great ingenuity, devising splints and accessories as he wanted them to fit deformities and to reduce fractures. The splint devised by him for immobilization of the knee-joint was the one used during the Great War, and subsequently for fractures of the femur, and this device alone will serve to perpetuate his memory for years to come.

The Life of Edward Jenner, M.D., F.R.S. Second Edition. By F. D. DREWITT, M.D., F.R.C.P. Pp. xi., 151. Illustrated. London: Longmans, Green & Co. 1933. Price 6s.—This second edition of "Drewitt's Life of Jenner" reminds us that we had not the opportunity of reviewing the first edition. The life is charmingly written, and has the advantage of containing some new information from the MS. Notebook of Jenner's recently published by the Royal College of Physicians. To Gloucestershire folk and dwellers in these western shires in general the romance of Jenner's life can never grow dim. Dr. Drewitt brings him clearly before us—the nature-lover, the artist, the family doctor and the keen scientist all combined within the compass of a single human mind and body. Bristolians will note with surprise one omission. Mention is made of various prisoners of war released by Napoleon at Jenner's request: the name of Francis Gold, who kept an anatomy school in College Green, Bristol, is not included, even though Gold published the details of his release in the preface to his translation of Ramond's *Travels in the Pyrenees*.

Biological Politics. By F. W. INMAN, M.B. Pp. xi., 258. Bristol: John Wright & Sons Ltd. 1935. Price 7s. 6d.—A reading of this little book gives one an impression such as one experiences when taking a country walk with a well-read, thoughtful, chatty elderly gentleman, who discourses as he walks, turning from subject to subject as fresh objects of interest come into sight. The general theme is the parallels that may be drawn from biology, especially human biology, and the modern political situation. He has views with some of which we concur, but not all. The doctor who likes a small volume of popular interest to wile away a few leisure hours may well obtain and read Dr. Inman's contribution.

A Synopsis of Surgical Anatomy. Second Edition. By A. L. MCGREGOR, M.Ch. Pp. xvii., 644. Illustrated. Bristol: John Wright & Sons Ltd. 1934. Price 17s. 6d.—That this book fills a distinct need seems to be indicated by the fact that a second edition has been called for only two years after the first. A book of 644 pages, it contains an enormous amount of information, much more anatomical than surgical, and so rather strong meat for a students' text-book. Applied anatomy is not a popular subject with the student at a time when his energies are devoted more particularly to clinical subjects, and it is almost too much to expect that he will

make a close study of so monumental a work as this. A smaller book is, quite naturally, more to his taste, and a few illustrations here and there of the way the anatomical facts presented are applied makes such a book more acceptable. Having said that, it must be said also that the facts are here presented in an eminently readable and assimilable form. In fact, it is possible to pick up the book, open it at random, and find at once something interesting, and presented in a particularly attractive way. Even the student will find, if he does not feel disposed to read it systematically from cover to cover, that nevertheless it is far from profitless to dip into at intervals, even if only for the elucidation of some anatomical problem which troubles him at the moment. The illustrations, simple but adequate, add to the value of the book, and the index is complete and accurate.

What of the Child? By A. KEFALAS, M.B. Pp. xvi., 187. London: William Heinemann, Ltd. 1934. Price 5s.—Dr. Kefalas has written a sensible and helpful book on the development and guidance of children, both physical and mental. The author's views on punishment, religious instruction and sex information are very well balanced. His advice on the choice of schools is delightful. At the outset he predicates two kinds to be specially avoided, "the Scholarship-Miracle Producer" and the "Forcing Ground for useful Subordinates." His own religious convictions are not unduly prominent, though we get an inkling from one of the closing sentences of the book, "the God of the Cross and the Gothic Arch is the God of the Microscope and the Workshop too." A wholly commendable book.

A Practical Manual of Diseases of the Chest. By M. DAVIDSON, M.D. Pp. xii., 528. Illustrated. London: Oxford University Press. 1935. Price 42s.—As the title suggests, the aim of the book is essentially practical. Academic discussion is subordinated to clinical considerations and treatment. The opening section, which deals with anatomical and physiological details, is beautifully illustrated, and radiology of the normal chest receives adequate attention. The book is excellently arranged, and every section contains an account of the recent advances in each particular subject. Where all is so good it is difficult to pick out individual items, but the sections on bronchiectasis, asthma, diseases of the pleura, and industrial diseases certainly merit special

attention. The author devotes much space to pulmonary tuberculosis ; this portion of the book is perhaps outstanding, and the reader feels that the views expressed are the product of ripe clinical experience. The section on intrathoracic new growths is excellent, and again shows the author's particular interest and personal experience. Throughout the book is lucid and easy to read. The illustrations, more particularly the radiograms, are of a very high order. There is hardly any problem in the range of diseases of the lungs and pleura which is not dealt with in a way calculated to help both consultant and general practitioner. The author is to be congratulated on producing the most useful book on diseases of the chest that has appeared for many years.

Baths and Medicinal Waters of Britain and Europe. By M. G. FOSTER, O.B.E., M.D. Pp. viii., 225. Illustrated. Bristol : John Wright & Sons Ltd. 1933. Price 12s. 6d.—Shortly before his lamented death Dr. Michael Foster had completed a survey of the baths and spas of Great Britain for the information of general practitioners. Since Sir Herman Weber's work on climatotherapy and balneotherapy appeared no comparable book has been published in England. Dr. Foster's experience was wide, and he wrote with ease and brevity that is most enviable. This volume gives in a small compass all the essential facts about the British waters and the claims made for their healing virtues. It will be wise to check these claims by occasional reference to the experimental data contained in Von Noorden's *Metabolism and Practical Medicine*, where the proofs of the accuracy of these claims are critically examined. One regrets that not even in the preface nor the introductory " historical " chapter is mention made of the masterly survey contained in Von Noorden's inexpugnable work.

X-Ray Interpretation. By H. C. H. BULL, M.A., M.B. Pp. xxxiv., 382. Illustrated. London : Oxford University Press. 1935. Price 21s.—The author indicates that the object of this book is to relate the X-ray appearances of various pathological conditions in all parts of the body with the actual lesions of gross pathology. He has described in twenty chapters, covering the various sections of the body in turn, the normal and the more common pathological conditions which are capable of demonstration by X-rays, and has wisely illustrated the text by 280 excellent line drawings,

which serve their purpose much better than reproductions of actual skiagrams; in fact, the illustrations constitute the best part of the book, and the type and general arrangements are also good. Its matter is fairly up to date, and on the whole sound, though there are some important omissions, and the chapter on the radiology of the chest is poor compared with those on the intestinal and genito-urinary tracts. Terminology employed is on the whole accurate, but one gets rather tired of the misuse of the word "fundus" in relation to the stomach. There is a useful short chapter on dental radiology and a good index. Apart from the illustrations there is nothing original in the book, and the author would probably have attained his object if he had included illustrations of actual pathological conditions side by side with their X-ray appearances. Such a book is yet to be written, and is much needed. Meanwhile, the present volume will be found useful to students and others as a handbook of reference.

Principles in the Treatment of Inflammation. By T. E. HAMMOND. Pp. xii., 209. London: H. K. Lewis & Co. Ltd. 1934. Price 10s. 6d.—The thesis propounded by the author is that there may be distinguished five inflammatory states: acute sthenic, acute asthenic, chronic sthenic, chronic asthenic and septicæmic. The reaction varies with the type of bacterial infection, and generally gram positive organisms cause sthenic and gram negative asthenic inflammation. If one agrees with these pronunciamentos one will perhaps like the book.

Injuries and their Treatment. By W. E. TUCKER, B.Ch. Pp. xi., 173. Illustrated. London: H. K. Lewis & Co. Ltd. 1935. Price 9s.—This book is of special interest to those engaged in the physio-therapeutic departments and to practitioners who treat cases of injuries. The author points out that injuries should be energetically treated, and not left to nature to recover; he shows that by the various forms of treatment at our disposal we may reduce the time of disablement by many weeks. The treatment of the commoner injuries is outlined, and the indications for the various forms of physio-therapy are plainly stated. Special mention is made of the value of manipulative treatment, the indications and principles of which are explained, the text being aided by clear drawings and excellent photographs.

A Short Practice of Surgery. Second Edition. By H. BAILEY, F.R.C.S., and R. J. McN. LOVE, M.S., F.R.C.S. Pp. viii., 987. Illustrated. London: H. K. Lewis and Co. Ltd. 1935. Price 30s.—This is an excellent guide to the student of surgery. It is both lucid and interestingly written, and the authors have compressed all that is important and up to date in a remarkably small space. There is scarcely an irrelevant word in the book. A distinctive feature and extremely helpful is the frequent classification of causes, pathological sequelæ and treatment of different diseases. The profuse illustrations are also a meritorious part of the work; perhaps a few of them might be a little less sketchy, for the general standard of the book is so excellent that the extra trouble and cost entailed would be fully justified. For value and accuracy the book is unsurpassed.

The Treatment of Common Female Ailments. Third Edition. By F. J. McCANN, M.D., F.R.C.S. Pp. viii., 379. London: Edward Arnold and Co. 1934. Price 12s. 6d.—The subject-matter has been brought up to date in the third edition of this text-book; it has been written by a gynæcologist of wide experience, and is largely a record of his own observation and practice. Primarily intended for the general practitioner, this book can also be read with profit by the student of medicine. In order to reduce the incidence of chronic ill-health amongst parous women, particular stress is laid on the importance of preventive measures, and on the need for adequate surgical treatment where such injuries occur. This book can be recommended as a useful addition to the medical practitioner's library.

Anæsthesia in Labour. By KATHARINE G. LLOYD-WILLIAMS, M.D. Pp. 96. Illustrated. London: Edward Arnold and Co. 1934. Price 5s.—Miss Lloyd-Williams is to be congratulated on her summary of modern methods in anæsthesia in midwifery. Apparently a method yet remains to be found which is completely reliable, and the general practitioner attending a case in a private house with one nurse and many anxious relatives will probably still remain faithful to chloroform, ether, hyoscine and morphia.

Editorial Notes

Dr. Conrad Fitz-Gerald of Newfoundland.

MESSRS. ARROWSMITH announce that a Biography of Dr. Conrad Fitz-Gerald of Fortune Bay, Newfoundland, is now being printed. His name is known to some of our readers as being the senior student on the roll of the Bristol Medical School, which he entered as long ago as 1866. A Foreword by one of his old friends speaks of the "brilliant exploits of this grand old gentleman, Dr. Fitz-Gerald, as a surgeon and navigator on the south coast of Newfoundland. He is beloved by the vast host of his patients, many of whom he attended at the risk of his life, beating up and down that treacherous, cruel and rocky coast in his good ship *Albatross*, manned entirely by himself as crew. Often he experienced raging gales and mountainous seas on a lee coast, and yet safely brought his good ship through these hard and desperate storms to safe anchorage in some friendly harbour, of which he seemed to have an uncanny knowledge concerning their tides and soundings. Often have I known him during the winter months battle his way on snow-shoes across this land of desolation against blizzards and heavy snow-storms to reach some isolated spot that the patient might have the advantage of his skill in medicine or surgery."

His grandson has gleaned from him the history of his life in England, and his travels round the world,

which he is now publishing for private circulation. If any of our readers wish to obtain a copy of this thrilling account of seamanship and medical practice, orders may be sent to Messrs. J. W. Arrowsmith Ltd., 11 Quay Street, Bristol. In these days, when doctors are accustomed to driving to their patients in fool-proof cars on modern highways, the account of Dr. Fitz-Gerald's professional rounds, sailing a seven-ton yacht round the tempestuous coast of Newfoundland, will arouse more feelings of contentment than envy. Fitz-Gerald's life is an outstanding example of how a man may achieve complete mastery in two very different callings. We are glad to know that as the sheets are in the press he enjoys such health that he could say of himself, "One of my legs is eighty-six, but the rest of me is fifty."

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Bristol Royal Infirmary Nurses' League News Letter.

WE are interested to hear that a Bristol Royal Infirmary Nurses' League has been formed to keep in touch with former Bristol Royal Infirmary nurses. The first meeting was held in London in 1933. A news letter has just been issued which is very capably edited, and is really a most interesting document. It describes recent changes at the Infirmary, gives personal news, and in particular includes a most remarkable article by Miss C. F. Hill, in which she relates her experiences. The Infirmary in those days was evidently a terrible place. The nurses had sometimes to sleep on the floor, or in dark, unventilated cubicles infested with bugs. They were half-starved, had nowhere to spend their off-duty time, and had to learn the theory of their profession by what they

could pick up from friendly medical students. The article is so interesting and informing that it deserves a very wide publicity.

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Cricket Challenge Cup.

WE learn that the Staff of the Bristol General Hospital has presented a Challenge Cup to be held by the winners of the annual cricket match between the Royal Infirmary and the General Hospital "to foster the excellent relations that exist between the two Institutions." This generous gift should serve to increase the keen enthusiasm which the inter-hospital cricket match always arouses.

Obituary

WALTER SALISBURY, M.D., M.S., F.R.C.S.

MR. WALTER SALISBURY died suddenly at Northampton on 7th January, 1935, at the age of forty-six. He had been suffering from pneumonia following influenza. He entered the Bristol Medical School in 1906, and was a student at the Royal Infirmary, winning the Tibbits Prize for Surgery. He qualified M.B., B.S. London, in 1913, and held the offices of House Surgeon and Casualty Officer at the Royal Infirmary and Senior Resident Officer at the General Hospital; he also held resident appointments at Queen Charlotte's Hospital, at the Hospital for Women, Soho, and at the Royal National Orthopædic Hospital. During the War he obtained a commission in the R.A.M.C., and served as a Surgical Specialist in Salonica. After a period of postgraduate study in London he was appointed Surgeon to the Frodingham Hospital, and in 1926 Surgeon to the Northampton General Hospital. He was a keen supporter of the British Medical Association and Secretary of the Northamptonshire Branch. His interests were at all times strongly gynæcological; he was Obstetric

Consultant to several Borough and County Councils, and was keenly interested in the new Maternity Block at the Northampton General Hospital, to the control of which it was generally anticipated he would have been appointed but for his untimely death. He leaves a widow and two daughters, to whom we extend our sincere sympathy.

HENRY WALDO, M.D., C.M., M.R.C.P.

DR. HENRY WALDO, who was born in Bristol in 1846, died on January 25th, 1935, at the close of a long and honourable career in the service of his native city. On leaving Bristol Grammar School in 1867 he entered the Bristol Medical School, and though this was sixty-eight years ago, we are glad to say that two of his fellow-students who entered a year earlier are still with us—Dr. J. E. Shaw, Consulting Physician to the Bristol Royal Infirmary, and Dr. Conrad Fitz-Gerald of Newfoundland.

Dr. Waldo continued his medical studies at St. Bartholomew's Hospital and at the University of Aberdeen, graduating M.B., C.M., in 1871, and proceeding to M.D. two years later; he also took the diploma of M.R.C.S. and in 1888 the M.R.C.P. After having held the post of Resident Medical Officer at the Royal General Dispensary in London he returned to his native city, and in 1873 was appointed Assistant Physician to the Bristol Royal Infirmary and within three years became full Physician. Dr. Waldo succeeded Dr. Fairbrother, who had resigned in accordance with the twenty years rule on June 27th, 1876. When Dr. E. Long Fox resigned on August 14th, 1877, the rules for staff appointments were altered, the tenure of office by physicians and surgeons being made subject to an age limit. This replaced the old rule of 1843, under which they were elected on condition that they did not hold office for more than twenty years.

Dr. Waldo being one of the first physicians appointed under the new rules, continued to serve for thirty years. He was appointed Consulting Physician in 1906, holding this office for twenty-nine years. Thus he was on the staff of the Royal Infirmary for sixty-one years in all.

In 1902 Dr. Waldo was President of the old Bath and Bristol Branch of the British Medical Association, and in 1907 he was President of the Bristol Medico-Chirurgical Society.

HENRY WALDO, M.D., C.M., M.R.C.P

In the latter year he was President of the Dermatological Society of Great Britain, a recognition of his work in charge of the new Department for Diseases of the Skin at the Royal Infirmary, to which he had been appointed in 1880.

The writer was for many years closely associated with Dr. Waldo as a colleague on the medical staff, and learnt to appreciate his sound training, sterling qualities and lovable disposition, and as so well expressed by his old friend and fellow-student, Dr. L. A. Weatherly, "he was quite the type of a family doctor, loved and respected by all his patients and their confidential friends."

His younger brother, the late Dr. F. J. Waldo, was Coroner for the City of London and Borough of Southwark.

Dr. Waldo became a widower twenty-six years ago, but he is survived by his two sons (one of whom, Dr. H. C. Waldo, is Medical Superintendent of the Nottinghamshire Mental Hospital) and three daughters.

P. WATSON-WILLIAMS.

Meetings of Societies

Bristol Medico-Chirurgical Society

SESSION 1934–35.

THE fourth meeting of the Session was held in the Physiological Lecture Theatre of the University on Wednesday, 9th January, 1935. The President, Mr. A. Rendle Short, was in the chair, and fifty members were present.

Dr. A. L. Taylor and Dr. T. B. Wansbrough showed pathological specimens and skiagrams respectively.

The minutes of the previous meeting were read and confirmed, and Dr. A. L. Taylor, at the request of the President, described the specimens which he had shown.

Dr. H. H. Carleton then read a paper entitled "**Habit and Illness,**" which is published on p. 41 of this issue, and he was congratulated by the President. In the discussion which followed the following spoke: The President, Dr. Frank Bodman, Mr. Adams, Dr. Glenny, Dr. Symes and Dr. Alexander and Dr. Carleton replied.

The fifth meeting of the Session was held in the Physiological Lecture Theatre of the University at 8.30 p.m. on Wednesday, 13th February, 1935. The President, Mr. A. Rendle Short, was in the chair, and thirty-two members were present.

Dr. A. D. Fraser showed pathological specimens.

The minutes of the previous meeting were read and confirmed.

The Secretary then read a communication from Dr. Hastings Moore, announcing that there would be a meeting of the Medical Dramatic Club on 21st February in the Physiological Lecture Theatre.

Mr. A. E. Iles and Mr. G. R. Scarff then read a paper on the **"Diseases of the Lachrymal Sac,"** and the following took part in the discussion which followed: The President, Mr. E. Watson-Williams, Mr. Garden, Mr. Wright, Mr. Walbank, Mr. James, Dr. Gee and Mr. Shepherd, and Mr. Iles and Mr. Scarff replied.

The sixth meeting of the Session was held in the Physiological Lecture Theatre of the University on Wednesday, 13th March, at 8.30 p.m. The President, Mr. A. Rendle Short, was in the Chair, and there were ninety-four members present.

Dr. A. L. Taylor and Dr. G. B. Bush showed Pathological Specimens and Skiagrams respectively.

The minutes of the previous meeting were read and confirmed, and the President then introduced Professor Miles H. Phillips, who gave an address on **"Men-Midwives—Past and Future."**

The President, congratulated Professor Miles Phillips and thanked him for his address, and in the short discussion which followed the President, Professor Drew Smythe, Mr. E. Watson-Williams, Dr. Maxwell and Dr. Alexander spoke, and Professor Miles Phillips replied.

A vote of thanks to Professor Miles Phillips was proposed by Dr. Nixon and seconded by Professor Drew Smythe, and this was carried with acclamation.

The Medical Library of the University of Bristol,

WITH WHICH IS INCORPORATED

The Library of the Bristol Medico-Chirurgical Society.

The following donations have been received since the publication of the list in December, 1934.

March, 1935.

American Laryngological, Rhinological and Otological Society, Inc. (1)	1 volume.
American Otological Society (2)	1 volume.
Association of American Physicians (3) ..	1 volume.
Dr. W. S. Bainbridge (4)	1 volume.
Professor R. J. Brocklehurst (5)	17 volumes.
J. Michell Clarke Fund (6)	1 volume.
Professor E. W. Hey Groves (7)	1 volume.
M. Auguste Lumière (8)	1 volume.
Mrs. J. E. MacKenty (9)..	1 volume.
Professor C. Bruce Perry (10)	2 volumes.
Dr. J. O. Symes (11)	1 volume.
Dr. W. Roger Williams (12)	1 volume.

Unbound periodicals have also been received from Professor E. W. Hey Groves, Professor C. Bruce Perry and Dr. J. Odery Symes.

THE ONE HUNDRED AND FIFTIETH LIST OF BOOKS.

The figures in round brackets refer to the figures after the names of the donors. The books to which no such figures are attached have either been bought from the Library Fund or received through the *Journal*.

Aarons, S. J....	*Aids to Gynæcology*	5th Ed. (5)	1920
Adam, J.	*Asthma and its Radical Treatment*		1913
Agduhr, E.	*Zur Kenntnis des Einflusses der Graviditäten und des Ergosterins auf das Wachstum* ..		1932
Atkinson, E. M.	*Abscess of the Brain*		1934
Bailey, H.	*Demonstrations of Physical Signs in Clinical Surgery*	4th Ed.	1933
Barnett, H. N.	*The Student's Text-book of Surgery*		[1916]
Beeston, G. N.	*The Conjoint Finals*, 1911–1932	2nd Ed.	1933
Berkart, J. B.	*On Asthma*		1878

Bernard, C. .. .. .. *Introduction to the Study of Experimental Medicine* 1927
Broomhead, R. .. .. *A Summary of the Treatment of Fractures and Dislocations* .. .. [1934]
Burroughs, Wellcome and Co. *The Romance of Exploration and Emergency First-Aid* .. .. [1934]
Cameron, A. T. .. .. *Recent Advances in Endocrinology* .. (11) 1933
Campbell, H. .. .. *Aids to Pathology* .. .. 4th Ed. (5) 1920
Commission on Medical Education. (Reports I—III.) 1927–28
Crawford, A. M. .. .. *Materia Medica for Nurses* .. 3rd Ed. 1934
Cross, H. H. U. .. .. *Electro-Therapy and Ionic Medication* .. 1925
Crowley, R. H. .. .. *Hygiene of School Life.* Ed. by C. W. Hutt .. .. 2nd Ed. (5) [1916]
Czermak, J. N. .. .. *Gesammelte Schriften.* 1 Bd. 2 Abt. .. 1879
Da Costa, J. .. .. .. *Clinical Hematology* 1902
Dally, J. F. H. .. .. *High Blood Pressure* .. .. .. 3rd Ed. 1934
Edinburgh Pathological Club. *An Inquiry into the Medical Curriculum* 1919
Fairbrother, R. W. .. *Handbook of Filterable Viruses* 1934
Faulkner, A. B. .. .. *Letters to the Royal College of Physicians* .. 1829
Garrod, A. E. et al. .. *Diseases of Children.* Ed. H. Thursfield and D. Paterson .. .. .. 3rd Ed. 1934
Geddes, P., and Thomson, J.A. *The Evolution of Sex* .. Rev. Ed. (5) 1901
Gies, W. J. .. .. .. *Dental Education in the U.S. and Canada* 1926
Gray, H. .. .. *Anatomy.* Ed. Pick and Howden. 16th Ed. 1905
Heath, C. .. .. .. *Practical Anatomy.* Ed. J. E. Lane. 9th Ed. (5) 1902
Hoffman, F. L. .. .. *Army Anthropometry and Medical Rejection Statistics* .. .. [1918]
Hoffman, F. L. .. .. *More Facts and Fallacies of Compulsory Health Insurance* .. .. [1920]
Hoffman, F. L. .. .. *San Francisco Cancer Survey. Preliminary Reports, I—VI* .. .. [1923–30]
Hoffman, F. L. .. .. *Suicide Problems* .. .. [1928]
Hopewell-Ash, E. L. .. *Melancholia in Everyday Practice* 1934
Hudson, B. .. .. .. *Aids to Medicine* .. .. .. 3rd Ed. (5) 1921
Imperial Social Hygiene Congress. *Proceedings* 1927
International Orthodontic Congress. 2. (1931) 1933
Irvine, K. N. .. .. *The B.C.G. Vaccine* 1934
Jones, E. .. .. .. *Treatment of the Neuroses* .. .. .. (5) 1920
Katz, L. et al., ... *Handbuch der Speziellen Chirurgie des Ohres.* 1 Bd. 2 Hälfte .. .. 2te Aufl. 1913
Lake, N. C., and Marshall, C. J. *Surgical Anatomy and Physiology* 1934
Leduc, J. .. .. .. *Indications . . . du Transport par Avion dans les Affections Chirurgicales* .. (7) 1934
Lord, J. R. .. .. .. *The Clinical Study of Mental Disorders* .. 1926
Lumière, A. .. .. .. *La Renaissance de la Médecine Humorale* (8) 1935
MacKenty, J. A. .. .. *Malignant Disease of the Larynx* .. (9) 1934
M'Lachlan, J. .. .. *Applied Anatomy.* Rev. by A. A. S. Skirving .. .. 2 vols. 4th Ed. (5) 1908
Martin, F. H. .. .. *Fifty Years of Medicine and Surgery* .. (10) 1934
Mayne's Medical Vocabulary. Rev. by Wagstaffe and Parker 7th Ed. (5) 1902

Moor, C. G., and Partridge, W. *Aids to Bacteriology* 3rd Ed. (5) 1916
Morris, H. *Human Anatomy* 5th Ed. (5) [1914]
Murrell, W. *What to do in Cases of Poisoning: by P. Hamill* 14th Ed. 1934
Nall, S. *Aids to Obstetrics.* Rev. by C. J. N. Longridge 8th Ed. (5) 1921
Norton, S. [*Seven Alchemical Tracts.*] Ed. E. Deani 1630
Oliver, H. G. *The Etiology and Treatment of Spasmodic Bronchial Asthma* 1934
Peking Union Medical College. *Dedication Ceremonies and Medical Conference* 1922
Raebiger, H. *Das Meerschweinchen; seine Zucht, Haltung u. Krankheiten* 2te Aufl. 1933
Rawling, L. B. *Head Injuries* 1934
Robertson, W. G. A. *Aids to Forensic Medicine and Toxicology* 9th Ed. (5) 1922
Robertson, W. G. A. *Aids to Public Health* (5) 1923
Samson, E. *Progressive Practice* [1931]
Semon, H. C. G. *An Atlas of the Commoner Skin Diseases* 1934
Stephens, J. W. W., and Christophers, S. R. *The Practical Study of Malaria* (5) 1904
Symonds, W. S. *Old Bones, or Notes for Young Naturalists* 2nd Ed. (5) 1864
Treves, F. *Surgical Applied Anatomy.* Rev. by C. C. Choyce 9th Ed. 1934
Walker, G. E. *Essays in Ophthalmology* (12) 1879
Whitnall, S. E. *The Study of Anatomy* 2nd Ed. (6) 1933

TRANSACTIONS, REPORTS, JOURNALS, ETC.

American Laryngological, Rhinological and Otological Society. Transactions of the 40th Annual Meeting (1) 1934
American Otological Society. Transactions. Vol. XXIV (2) 1934
L'Année Médicale Pratique, 1932 (10) 1932
Association of American Physicians. Transactions. Vol. 49 (3) 1934
Chinese Medical Directory. 3rd Edition 1932
Dentists' Register, 1921, 1922, 1924, 1930–1932 1921–1932
Imperial Cancer Research Fund. Scientific Report, 11 and Supplement 1934
Kelly's Directory of Bristol, 1935 1935
Liverpool Medical and Surgical Reports. Vol. I 1867
Medical Register, 1922, 1924, 1932 1922–1932
Middlesex Hospital Medical School. Published Papers, 1927/8, 1928/9 1928–1929
Ophthalmological Society of the United Kingdom. Transactions. Vol. LIV 1934
Report on the 7th International Congress of Military Medicine, 1933 (4) 1934
Rockefeller Foundation Annual Report, 1920 1920
Royal College of Physicians of London. List of Fellows, etc., 1920, 1921 1920–21
St. Bartholomew's Hospital Reports. Vol. LXVII 1934
Surgical Clinics of North America. Vol. 14. No. 6 (December, 1934) 1934

Publications Received

From Messrs. Burroughs, Wellcome & Co.:

The Romance of Exploration and Emergency First Aid.

From Messrs. Cassell & Co. Ltd.:

A Text-book of Gynæcological Surgery. 3rd Edition. By C. Berkeley, Kt., M.A., M.D., and V. Bonney, M.S., M.D., D.Sc. Price 45s.

Clinical Methods. 10th Edition. By R. Hutchison, M.D., and D. Hunter, M.D. Price 12s. 6d.

From Messrs. Jowett & Sowry Ltd.:

Summary of the Treatment of Fractures and Dislocations. By R. Broomhead, M.B. Price 3s. 6d.

From Messrs. H. K. Lewis & Co. Ltd.:

A Short Practice of Surgery. 2nd Edition (in one volume). By H. Bailey and R. J. McN. Love, M.S. Price 30s.

Injuries and Their Treatment. By W. E. Tucker, M.A., B.Ch. Price 9s.

Some Thoughts of a Doctor. By F. P. Weber, M.A., M.D. Price 6s.

From Messrs. Macmillan & Co. Ltd.:

The Conduct and Fate of the Peripheral Segment of a Divided Nerve in the Cervical Region when United by Suture to the Central Segment of Another Divided Nerve. By C. Ballance, Kt. Price 7s. 6d.

From The Oxford University Press:

X-Ray Interpretation. By H. C. H. Bull, M.A., M.B. Price 21s.

Oxygen and Carbon-Dioxide Therapy. By A. Campbell, M.D., D.Sc., and E. P. Poulton, M.A., D.M. Price 12s. 6d.

A Practical Manual of Diseases of the Chest. By M. Davidson, M.A., M.D. Price 42s.

Hugh Owen Thomas. By F. Watson. Price 12s. 6d.

From Dr. M. Siegel:

Constructive Eugenics and Practical Marriage. By M. Siegel, M.D.

From Messrs. John Wright & Sons Ltd.:

Synopsis of Obstetrics and Gynæcology. 6th Edition. By A. W. Bourne, M.A., M.B., B.Ch. Price 15s.

British Journal of Surgery. Vol. XXII. No. 87. January, 1935. Price 12s. 6d.

Ideal Health. 3rd Edition. By A. Bryce, M.D., C.M. Price 5s.

Biological Politics. By F. W. Inman, M.B., Ch.B. Price 7s. 6d.

The Status of Enzymes and Hormones in Therapy. By G. E. Walker, M.D. Price 2s.

Local Medical Notes

EXAMINATION RESULTS.

University of Bristol.—Students of the University have recently passed the following examinations :—

M.B., Ch.B. (*Part I.*).—*Second Examination. Pass :* Catherine M. Addy, Ruth Appleby, Dorothy M. Ayre, D. L. Bayley, Jean A. Butt, Mary Crago, J. N. P. Davies, Marjorie O. Dunster, J. L. Elliott, J. L. Emery, Sara M. Field-Richards, Joan M. Foss, E. M. Grace, Betty F. Hannaford, F. R. Hurford, Megan E. Jones, Rosemary W. Knowles, N. E. Melling, Joyce S. Miller, C. A. St. Hill, Jeannette D. Shed, Dorothy M. Shotton, S. J. Silvey, P. R. H. Slade, J. E. Smith, Sylvia E. Smith, A. A. Steinberg, Edith M. Wagstaff, T. H. White.

M.B., Ch.B. (*Part II.*).—*Second Examination. Pass :* J. F. Ackroyd, E. M. Barber, P. A. Bennett, Kathleen E. Byrt, M. Dworkis, W. H. G. Elliott, Eileen M. D. Knox, Jane Mackintosh, Joan E. Mackworth (with Distinction in Anatomy), G. R. E. Maxted, R. H. Owen, A. H. Wright (with Distinction in Anatomy).

B.D.S.—*Second Examination. Pass :* D. R. Stevens.

L.D.S.—*First Professional Examination. Pass :* F. S. S. Baguley, D. C. Bodenham, J. F. Durie, C. F. Howell, R. J. Lee, C. C. Moore, A. J. H. Orchard, J. C. F. Rolls, D. M. Sanders, J. G. Windmill.

Conjoint Board.—M.R.C.S., L.R.C.P.—*Pass : In Chemistry and Physics :* Susie C. Sampson. *In Chemistry :* Mary R. More. *In Physics and Biology :* S. G. Sheffield. *In Anatomy and Physiology :* T. R. de V. Vallentin, P. W. J. Parkes. *In Anatomy :* A. L. T. Beddoe, Margaret E. M. Slater. *In Physiology :* Myrtle M. Baxter. *In Pharmacology and Materia Medica :* P. W. M. Martin. *In Pathology and Surgery :* A. W. Woolley. *In Surgery :* A. E. Jowett. *In Pathology and Midwifery :* Kathleen G. Brimelow, J. G. Field. *In Midwifery :* T. H. Taylor.

L.D.S., R.C.S.—*Pass: First Professional Examination:* A. N. Brimelow, J. R. P. Thomas, J. T. S. Hutchins, W. White. *Final Examination (Part I.):* D. J. Dymond, R. Edwards, J. G. Jones. *Final Examination (Part II.):* L. Jonathan.

L.S.A.—*Final Examination. Pass: In Medicine:* R. M. Outfin.*

APPOINTMENTS.

Bristol Royal Infirmary.—Physician: Dr. A. T. Todd, O.B.E., M.R.C.P. Surgeon: Mr. A. W. Adams, M.S., F.R.C.S. Obstetric Physician: Mr. H. L. Shepherd, Ch.M. Assistant Physician: Dr. G. E. F. Sutton, M.C., M.D., M.R.C.P. Assistant Surgeon: Mr. R. G. Paul, F.R.C.S.

Bristol General Hospital.—Physician: Dr. J. A. Birrell, M.D., M.R.C.P. Assistant Physician: Dr. H. J. Orr-Ewing, M.C., M.D., F.R.C.P.

* Qualified.

Bristol Medico-Chirurgical Society.

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President-Elect.

A. E. ILES, *O.B.E.*, M.B., B.S., F.R.C.S.

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- G. PARKER, M.A., M.D. Cantab. (Hon. Librarian).

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G. PARKER, M.A., M.D. Cantab.
A. R. SHORT, B.Sc., M.D. Lond., F.R.C.S.
J. O. SYMES, M.D. Lond.

Medical Practitioners wishing to join the Society are requested to communicate with the Hon. Secretary, Mr. H. L. SHEPHERD, 79 Pembroke Road, Clifton. The Annual Subscription is £1 11s. 6d., payable to Hon. Treasurer.

Extracts from Journal By-laws.

4.—The *Journal* shall be delivered free to Subscribers and also to Members of the Society whose subscriptions are not in arrear.

6.—The Annual Subscription to the *Journal* is 10/6, payable to Hon. Treasurer.

Communications intended for insertion in the *Journal* should be sent to the Editor, Dr. J. A. NIXON, 7 Lansdown Place, Clifton, Bristol.

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